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FINAL
ENVIRONMENTAL STATEMENT

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**PROPOSED
SUPERIOR OIL COMPANY
LAND EXCHANGE
AND
OIL SHALE RESOURCE
DEVELOPMENT**



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BUREAU OF LAND MANAGEMENT

8000-778

COVER: *Photograph looking northeastward with the proposed plant site shown near the center.*



United States Department of the Interior

IN REPLY REFER TO

CO-920

1792

BUREAU OF LAND MANAGEMENT

COLORADO STATE OFFICE
ROOM 700, COLORADO STATE BANK BUILDING
1600 BROADWAY
DENVER, COLORADO 80202

NOTICE

The "Final Environmental Statement - Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development" has been completed. It describes and analyzes the proposal and alternatives for reaching the purpose and objectives of that proposal, plus the effect of no federal action.

Following a review of the Draft Environmental Statement, comments were given to the BLM from other governmental entities and the general public. Reviewer comments were received at a public hearing and by letter. The comments, along with BLM responses, are included in the environmental statement (ES).

The ES is not the decision-making document. Actions that will be carried out before a management decision will be made are described in the Authorizing Actions section of the document. The decision could be the proposal, one of the alternatives, a combination of the best features of the proposal and alternatives, or no federal action. A document outlining the final management direction will be prepared and made available.

Thank you for your interest and assistance.

DALE R. ANDRUS
State Director



Save Energy and You Serve America!

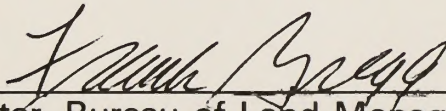
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FINAL
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**PROPOSED
SUPERIOR OIL COMPANY
LAND EXCHANGE
AND
OIL SHALE RESOURCE
DEVELOPMENT**



Director, Bureau of Land Management

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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ENVIRONMENTAL STATEMENT

PROPOSED
SUPERIOR OIL COMPANY
LAND EXCHANGE
AND
OIL SHALE RESOURCE
DEVELOPMENT


Director, Bureau of Land Management

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUMMARY

() Draft (X) Final Environmental Statement

Department of the Interior, Bureau of Land Management

1. *Type of Action:* (X) Administrative () Legislative

2. *Brief Description of Action:* The Superior Oil Company requested an exchange of public land for private land. With the exchange, an economical mining unit would be formed and oil shale resources developed. Major federal actions would be the revoking of the oil shale withdrawal by the Secretary of the Interior and the exchange of land by BLM.

Following the exchange, Superior would construct an underground mine and a processing plant. The mine would produce an average of about 26,000 tons of oil shale daily. From the oil shale, the plant would produce about 4,800 tons of nahcolite, 11,500 barrels of shale oil, 580 tons of alumina, and 1,000 tons of soda ash daily. Production would continue for about 20 years. Above-ground facilities would occupy about 380 acres. Approximately 920 people would be employed during operation of the project. Products would be hauled from the plant by truck.

3. *Summary of Environmental Impacts:* Jobs would be created and the average income of the area increased. Other industries, such as agriculture, would be disrupted by the drawing away of employees to the new employments. Businesses would prosper and the costs of goods and services would be inflated. Overall, the quality of life would increase. However, those on fixed incomes and those unable to compete in business would have their quality of life decreased. Completion of the project and the

migration of some of the people out of the area would depress the area.

Lifestyles would be further trended from an agricultural-type, or rural, to industrial. Only Rio Blanco County and the Meeker School District would collect sufficient revenues to cover costs of community services to the new population. Service levels would decline or taxation would increase in Garfield County, Rifle, Rangely, Meeker, and in the Rifle and Rangely School Districts.

Two ranching operations would be impacted by reducing net revenues. Either the ranchers would be forced from business or the operation would be further subsidized.

Highway usage would expand. Maintenance costs would be higher. Congestion would increase as would safety hazards, noise levels, and deer-vehicle collisions.

Water quality in Piceance Creek and the White River would be increased by the removal of salt during operation of the project. The quality of other valued elements of the environment, such as air quality, would decline.

4. *Alternatives Considered:*

A. No Action

B. Product Transportation

1. Railroad

2. Pipeline

C. Expanded Resource Development

5. *Request for Comments:* See the list contained in Chapter 9--Consultation and Coordination.

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PREFACE

The Final Environmental Statement consists of two volumes. Volume 1 was originally distributed as the Draft Environmental Statement (DES) in July, 1979. Comments on the DES did not require significant changes in data, analysis, or conclusions. Therefore, Volume 1 has not been reprinted. A limited number of copies of Volume 1 are available upon request to the:

State Director
BLM-Colorado State Office
Room 700, Colorado State Bank Building
1600 Broadway
Denver, Colorado 80202

Volume 2 contains the Coordination in the Review of the DES and Comment and Response sections of Chapter 9. Chapters 1 through 8 of Volume 1 are incorporated by reference. Factual corrections to these chapters are made in the section entitled Errata.

CHAPTER 9

COORDINATION IN THE REVIEW OF THE DRAFT ENVIRONMENTAL STATEMENT (DES)

The DES was filed with the EPA and made available to the public on July 12, 1979. Its availability and the time and place for the public hearing were announced in the Federal Register by the Department of the Interior and EPA on July 17, 1979, and July 20, 1979, respectively, and by regional news media.

August 31, 1979, was originally established as the deadline for submission of written comment. The comment period was extended to September 7, 1979, and was announced by the BLM in the Federal Register on August 6, 1979, and by regional news media.

A public hearing was held on August 7, 1979, in Meeker, Colorado. Copies of the hearing transcript, along with the attendance list, are available for public review at BLM offices in Denver, Craig, and Meeker, Colorado.

The list of agencies and others that have requested copies of the DES is available for review at the BLM Colorado State Office, Denver, Colorado.

COMMENTS AND RESPONSES

The remainder of Chapter 9 is divided into two portions: (1) written comments received, and responses and (2) oral comments derived from the hearing transcripts, which were not duplicated in subsequent written comments from that witness, and responses. Any comments received too late for response in the FES will be answered individually by mail. The late comments and their responses will become a part of the Superior case file maintained in the Colorado State Office and will be given equal consideration with the environmental statement during the decision-making process.

All written comments and oral testimony from the hearing were reviewed for consideration in preparation of the FES. Those comments that presented new data, questioned facts and/or analyses, and raised

questions or issues bearing directly upon the DES were carefully considered and evaluated. Although comments pertaining to federal policy, format of the ES, and environmental analysis procedures were not responded to in the FES, these comments will be made available for consideration as appropriate in the decision making process. Letters which were general or did not contain substantive comments were reviewed but no response was made.

An index number was assigned to each letter received and to the person who presented testimony. That number appears in the upper right corner on each letter and testimony. Responses are keyed to individual comments contained in the letters and testimony. Each individual comment is lettered in the left margin adjacent to the comment.

Comment letters are listed below. A response was not necessary for those marked with an asterick (*).

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COMMENT LETTER 1



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

REGION VII
FEDERAL OFFICE BUILDING
19TH AND STOUT STREETS
DENVER, COLORADO 80204

August 29, 1979

OFFICE OF THE
PRINCIPAL REGIONAL OFFICIAL

79 AUG 31 AM 11

ROFEE

Mr. Dale R. Andrus
State Director
Bureau of Land Management
Department of Interior
Colorado State Office
Room 700, Colorado State Bank Building
Denver, Colorado 80202

Dear Mr. Andrus:

We have reviewed the proposed Superior Oil Company Land Exchange and Oil Shale Resource Development draft environmental impact statement and have no specific comments at this time.

It is apparent that oil shale development will have an impact on air, water, soil vegetation and the population in Northwest Colorado and Eastern Utah. Since this is an experimental undertaking, we feel that all concerned official agencies should closely observe and assist when possible in the development of these resources.

Sincerely yours

E. W. McIntire
E. W. McIntire
Regional Environmental Officer

COMMENT LETTER 2a



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

WASHINGTON, D.C. 20410

OFFICE OF THE ASSISTANT SECRETARY
FOR COMMUNITY PLANNING AND DEVELOPMENT

11

IN REPLY REFER TO:

Mr. Dale R. Andrus
State Director
U.S. Department of Interior
Room 700, Colorado State Bank Building
1600 Broadway
Denver, Colorado 80202

Dear Mr. Andrus:

Thank you for providing us with an opportunity to review the Draft Environmental Impact Statement for the Superior Oil Company Land Exchange.

We have requested our Denver Regional Office to review and comment, as appropriate, by your due date of August 31, 1979.

Sincerely,

Richard H. Brown
Richard H. Brown
Director
Office of Environmental Quality

COMMENT LETTER 2 b



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
REGIONAL/AREA OFFICE
EXECUTIVE TOWER, 1405 CURTIS STREET
DENVER, COLORADO 80202

REGION VIII

August 8, 1979

IN REPLY REFER TO:
850Q

Mr. Dale R. Andrus
U.S. Department of Interior
Rm. 700, Colorado State Bank Bldg.
1600 Broadway
Denver, Colorado 80202

Dear Mr. Andrus:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement (EIS), for the proposed Superior Oil Company Land Exchange and Oil Shale Resource Development, Rio Blanco County, Colorado.

Your Draft EIS has been reviewed with specific consideration for the areas of responsibility assigned the Department of Housing and Urban Development (HUD) for review of other agencies' EIS's. These areas focus on a proposal's compatibility with local and regional comprehensive planning and impacts on urbanized areas. Within this context, we feel that this document is adequate.

If you have any questions, regarding these comments, please contact Mr. Carroll F. Goodwin, Area Office Environmental Clearance Officer, at 837-3102 here in Denver.

Sincerely,

Raymond D. McKinney
Raymond D. McKinney
Director

Program Planning and Evaluation

AREA OFFICE
Denver, Colorado

COMMENT LETTER 3 a



United States Department of the Interior

BUREAU OF MINES
BUILDING 30, DENVER FEDERAL CENTER
DENVER, COLORADO 80225
Denver Mining Research Center
July 26, 1979

Memorandum

To: State Director, Bureau of Land Management, Colorado State Office, Denver, Colorado 80202

From: Bureau of Mines, Denver Mining Research Center, Denver, Colorado

Subject: Comments on DES for Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development

The following comments are offered in response to your invitation to review and comment on the adequacy of the subject DES.

Chapter 1 - Project Operations (Mine), p. 15

A { In Figure 1-13, the two access openings in the 100-ft barrier pillar around the 100-acre mining panel appear quite narrow and thus could restrict ventilation as the large panel is mined.

Chapter 2 - Geology and Minerals, p. 42

B { The Mahogany Zone is not more than 600 ft thick in the southern part of the basin. Rather it is more than 60 ft thick there. Incidentally, this zone ranges up to some 200 ft in thickness in the depositional center of the basin.

C { A prime concern with respect to the proposed land exchange is the relative values of the mineral resources. Although the total recoverable reserves given for the two exchange blocks appear roughly equivalent, the recoverable reserves per unit area vary somewhat with the particular commodity. Recoverable alumina per acre is about the same for both tracts; whereas the private tract has some 5,000 barrels per acre more recoverable oil and the federal tract has nearly twice as much recoverable naphthalene per acre. Further, it is uncertain whether the quoted reserves are technically or economically recoverable or whether current or future technology and economics are considered. Recoverable reserves are determined largely from the grade and thickness of the individual stratigraphic units or zones in the deposit, neither of which are provided. Consequently, there is no



2
 way that the relative value of the two tracts can be verified from the information included in the DES.

Chapter 3 - Geology and Minerals, p. 67

D { Text indicates that the nahcolite produced by the proposed project would permit 237 million tons of coal with a 3 percent sulfur content to be used as fuel in electrical generating plants. Most western coals average less than 1 percent sulfur. Would the nahcolite thus produced permit the use of the same or greater amounts of this lower sulfur coal, and would the quoted 87 percent removal still hold in such case?

Chapter 6 - Interrelated Projects, p. 77

E { The Paraho project mentioned as having the potential to affect the same environmental components as the Superior project is now inactive.

F { Would the 738,000-kilowatt daily electrical requirements of the Superior project come from the planned 500-megawatt coal fired electrical generating plant of Moon Lake Electric Association? If not, what is the source? How much coal would have to be burned to meet Superior's electrical requirements, and how much of Superior's nahcolite production might be required to clean up the stack gases for such requirements?

Chapter 7 - Geology and Minerals, p. 91

G { The reason for including a comparison of the minerals in the whole basin left unrecoverable with current technology is not apparent. Something appears to be missing, or left unsaid, here. A more meaningful comparison could be made between the total resources or reserves in the exchange blocks and the percent mining extraction or overall recovery of these by the proposed Superior project.

Chapter 8 - Expanded Resource Development Alternative, p. 95

H { Leasing of federal lands in lieu of the proposed land exchange would appear to have considerable merit--perhaps more than the land exchange. In such case, the plant and other facilities could be constructed and operated in stages or modules. Staged or modular operation could be monitored, impacts assessed, and economics evaluated as the project proceeded.

R. L. Bolmer
 R. L. Bolmer, Mining Engineer
 Western Oil Shale Activities Group

Response to Comment Letter 3
 Bureau of Mines

- A. Figure 1-13 (page 16) is intended to be a schematic drawing only. Its purpose is to aid the public in understanding the proposed mining operation. Mine health and safety aspects, including ventilation, is regulated and enforced by federal and state agencies, including the U.S. Mine Safety and Health Administration and Colorado Division of Mines.
- B. See Errata-Item G.
- C. The "relative values of the two tracts" was not intended to be compared in this environmental statement. A land exchange would only be made between land parcels of equal value in accordance with the Federal Land Policy and Management Act (Reference: page three, left column, second full paragraph, second sentence).
- D. Approximately three times the quantity of 1 percent coal could be burned using the same amount of nahcolite required for 3 percent sulfur coal. The 87 percent removal would not change.
- E. Paraho is currently inactive but possesses the potential for activation, especially in light of the interest in developing oil shale technology. A good example is the Department of Energy's "Program Opportunity Notice" (DE-PN03-79ET14103) soliciting participants for developing oil shale retorting modules; which Paraho has made application. Also, by including Paraho as an interrelated projects potential impacts are maximized.
- F. The electrical requirement for the Superior project is not proposed to come from the Moon Lake Project. Power would be supplied by the Electric by tapping the existing line that runs through the proposed shale and process water storage area (Reference page 5, left column, fourth full paragraph, first sentence, and Map 1-2). According to the Colorado Public Utilities Commission, the Electric presently has sufficient capacity except for the 2 to 3 days per year of peak demand. On these days either Superior would shut-down operations or the Electric would purchase power off the Colorado power grid, which has excess capacity.

G. The reason for including the quantities of minerals in the whole basin is to show magnitude. For example, the unrecovered 19 million tons of nahcolite is nominal compared to the 29 billion tons within the Piceance Basin.



United States Department of the Interior
BUREAU OF MINES

79 AUG 28 1979 DENVER FEDERAL CENTER
DENVER, COLORADO 80225
Office of
Chief
Intermountain Field Operations Center

August 27, 1979

Your reference:
CO-920 1792

Memorandum

To: Dale R. Andrus, Colorado State Director, Bureau of Land Management, Room 700, Colorado State Bank Building, 1600 Broadway, Denver, Colorado 80202

From: Chief, Intermountain Field Operations Center

Subject: Review of draft environmental statement on Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development

The proposed action evaluated by BLM in the subject environmental statement is the exchange of 2,572 acres of private land for 2,045 acres of adjacent public land. The exchange would permit Superior Oil Co. to form a logical mining unit and to extract and process nahcolite, shale oil, alumina, and soda ash from oil shale lands between Meeker and Rangely, Colo.

Chapter 7, Irreversible and Irrecoverable Commitments of Resources, enumerates the quantities of minerals that probably would be left unrecovered because of inefficiencies in current mining technology and hence lost to future use. This loss should not be considered an adverse impact on the mineral resource, but a part of the normal cost of mining. A mineral resource is of no use to society until it is mined and, although some of the resource is lost in the process, only by mining can the resource become available for use.

A

A statement on page 83 indicates that a comparison was made of the energy that would be required to produce the mineral product by the method proposed and that required by other methods. The reader then is referred to table 6-23 (page 90), which is difficult to understand. Perhaps it can be restructured to present the information more clearly. Also, since

B



COMMENT LETTER 3b

a major portion of the product of the proposed mine is energy, a comparison of energy consumed with energy produced would be useful in evaluating the proposal.

This is a well-done environmental statement. The large project map (Map 102) is particularly useful in understanding the proposed action and should be more liberally referenced in describing the proposed project.

Joseph B. Smith
Joseph B. Smith

RESPONSE TO 3b

Response to Comment Letter 3b
Bureau of Mines

- A. Chapter 7 describes the irretrievable commitments of resources that would occur as a result of the proposed project. The quantities of minerals left unrecoverable (Reference: page 91, right column, second paragraph) would be irretrievable with current technology; recognizing that unrecovered minerals are a normal cost of mining.
- B. The summary table (Reference: page 90, Table 7-23) is supported by the narrative (Reference: page 83, right column, first paragraph) and the cited report which is available for review at the BLM Colorado State Office.

A comparison of energy consumed with energy produced is not considered a valid evaluation because the project involves a fully integrated process with energy production, in the form of shale oil, being only one product.



United States Department of the Interior

BUREAU OF RECLAMATION
UPPER COLORADO REGIONAL OFFICE
1600 BROADWAY, DENVER, COLORADO 80202

UC-150
120.1

AUG 21 1979

Memorandum

To: State Director, Bureau of Land Management, Colorado
State Office, Room 700, Colorado State Bank Building,
1600 Broadway, Denver, Colorado 80202

From: Regional Director

Subject: Review of Draft Environmental Statement for Proposed
Superior Oil Company Land Exchange and Oil Shale Resource
Development (DES 79-40)

We have reviewed the above draft environmental impact statement for the Bureau of Reclamation and have the following comments to offer:

- A { Page 5. The amount of power which would be used annually should be quantified.
- B { Page 15. The drainage system for the site should be discussed, since surface runoff from the area could jeopardize the surface water quality.
- C { Page 18. Since it appears the quality of the water in the water storage basin may be of low quality, an analysis of the advisability of lining the storage area should be made.
- D { Page 62. The analyses throughout the environmental impact statement seem to underrate the potential project specific and cumulative impacts on the city of Meeker. Since costs substantially exceed revenues, some consideration should be given to mitigating these financial impacts on the community.
- E { Page 70. The possible degradation of ground water aquifers from percolation through the spent shale disposal areas should be analyzed.
- F { Page 73. Ongoing monitoring programs, particularly water quality, should be identified and discussed in detail.

G { Page 93. We are not clear as to whether or not other lands were considered for the land exchange. If they were, these alternatives should be addressed.

A. W. Wilkey

cc: Director, Office of Environmental Project Review, Office of the Secretary, Department of the Interior, Washington, DC 20240
Commissioner, Attention: 150

RESPONSE TO 4

Response to Comment Letter 4
Bureau of Reclamation

- A. Approximately 739,000 kilowatt hours of electricity would be used daily (Reference: page 15, left column, first paragraph, second sentence).
- B. Drainage from the proposed plant would be collected by a "storm sewage-type" system consisting of lined storm ditches, piping, and pumping stations. The drainage would be treated in an industrial waste treatment plant (Reference: page 8, left column, sixth full paragraph). Treated effluent would be piped to the process water storage basin and the sludge would be backfilled in the mine (Reference: page 15, left column, third paragraph).
- C. The drainage system for the shale and process water storage area consist of ditches around the area to carry runoff from the area (Reference: page 10, right column, fourth paragraph), and the contouring of the area so that all drainage would flow into the process water storage basin (Reference: page 11, left column, fourth full paragraph).
- D. The water storage basin would be lined with "... impervious man-made material." (Reference: page 11, left column, second paragraph, third sentence). All drainage would flow into this basin (See response B above). The proposed dike would be built to prevent drainage from flowing downstream into Piceance Creek (Reference: page 11, left column, third full paragraph).
- E. The analysis was not directed towards underrating Meeker or other governmental entities in the project area, nor was one "played off" against the other. The ultimate effect of costs exceeding revenues is essentially the same, decreased service levels or increased taxation (Reference: page 62, left column, third paragraph). Magnitudes are shown in Tables 3-17 through 3-24. Cumulative effects are discussed in Chapter 6 (Reference: page 17, right column, fifth full paragraph, including Tables 6-10 through 6-17). BLM does not have the statutory means to mitigate financial impacts as it relates to the land exchange proposal. A delay alternative was considered primarily to mitigate possible socioeconomic impacts (Reference: page 93, left column, first paragraph). Superior's proposed schedule, including employment, was compared to those of the inter-related projects (Chapter 6); however, the comparison presented no significant change in impacts.
- F. Water percolation through the processed shale would occur while the process shale is waiting to be backfilled into the mine

RESPONSE TO 4

- F. There are no ongoing quality monitoring programs being carried out specifically for the proposed project. Superior has collected air and water data which was used in the analysis of impacts (Reference: page 44, right column, fourth sentence and page 67, left column, third full paragraph).
- G. Before the proposed project would be implemented Superior would provide the Environmental Protection Agency with actual monitored air quality data (Reference: page 3, right column, second full paragraph). Superior plans to collect this and any other required site-specific "quality" data during the initial 18-month preconstruction period (Reference: page 5, right column, third full paragraph).
- H. Other land tracts, along with other exchange schemes including exchanging minerals for minerals, were evaluated (Reference: page 93, left column, first paragraph). The actual configuration of land that would be exchanged would be determined only after appraisal of the land values (Reference: page 3, left column, second full paragraph, second sentence). That area assessed in the document and shown in Map 1-2 is the maximum possible acreage that would be exchanged. This was done in order to maximize possible impacts in the analysis process.



United States Department of the Interior

GEOLOGICAL SURVEY
Box 25046
Denver Federal Center
Denver, Colorado 80225

Office of Energy Resources
Branch of Chemical Resources
Mail Stop 939

July 24, 1979

Memorandum

To: Dale R. Andrus, State Director, U.S. Bureau of Land Management
From: John R. Donnell, U.S. Geological Survey
Subject: Review of the Draft Environmental Statement

My comments are restricted mostly to the area of my particular interest, geology, resource and minerals, and a possible alternative to the proposed exchange.

Much of the section on geology and minerals is either misleading or inaccurate. My comments on this section are listed below.

- A { 1. The map 1-1, pg. 2 and 6-1, pg. 78, is not a very good representation of the main part of the Piceance Creek Basin. Much of the privately owned oil shale in Garfield County is not included within the outline of the basin.
- B { 2. The description of the physiography of the basin is incomplete. The steep walled canyons, capped by sheer cliffs in the drainages tributary to the Colorado River should be contrasted with the moderately steep slopes, with considerably less relief along the streams tributary to the White River.
- C { 3. (a) The first sentence in paragraph 3, under geology on pg. 42, conveys the impression that the 1,200 billion barrels of oil equivalent is included in the entire 2,500 feet of rock that consist only in part of oil shale.
- D { (b) If the 2,500 feet of sediments mentioned above includes both the Green River and Uinta Formations, then the thickness is actually more than 3,500 feet.
- E { (c) In the project area, the Green River Formation contains the Douglas Creek Member, as well as the Parachute Creek and Garden Gulch Members.



- F { (d) The Garden Gulch Member, as well as the Parachute Creek Member, consists in great part, of oil shale (containing mostly clay rather than carbonate minerals).
- G { 4. (a) I think, in paragraph 5, that what is meant is that the Parachute Creek Member is 2,000 feet thick, rather than 2,000 feet deep.
- H { (b) The richest oil shale, in thin beds, is actually in one of the oil shale zones below the Mahogany. Nowhere in the Piceance Creek Basin is the Mahogany Zone 600 feet thick. In the southern part of the basin, the Mahogany Zone, and the oil shale section above it, total 600 feet in thickness.
- I { 5. The leached zone does outcrop in the southern part of the basin (paragraph 5, pg. 42). Both in the text, and on map 2-1, it should be described as estimated edge of significant leached zone.
- J { 6. Paragraph 8, in the Geology Section, pg. 42, should read, "The U.S.G.S. reports that the recoverable mineral reserves on the approximately 2,572 acres of private land, Superior proposes to exchange are about 412 million bbls. of shale oil, 19 million tons of nahcolite and 12.7 millions of tons of alumina (in more than 20 equivalent gallon per ton recoverable reserves). **," On the 2,045 acres of public lands that would be involved in the exchange the reserves are 317.5 million barrels of shale oil, 27 million tons of nahcolite, and 9.8 million tons of alumina (in more than 25 and 20 gallon per ton recoverable reserves).
- K { The current consumption of petroleum more nearly approximates 18 million barrels a day, or about 6.5 billion barrels a year, rather than 16 million barrels a day or 600 million barrels a year, as stated on pg. 67, last sentence.
- L { One of the other alternatives, that is not listed in the first paragraph on pg. 93, is an exchange of lands that would result in a more nearly equal amount of nahcolite and oil shale of comparable value on both federal and fee land. The map in the pocket shows, by diagonally ruled pattern, that the only lands to be mined after the proposed exchange, would be those acquired from the Federal Government. As a result of the alternative exchange, both federal and fee land would be involved in the 20 year mining operation.
- M { The map in the pocket does not show, by horizontal ruled pattern, that the surface ownership of the land to be exchanged by Superior Oil Company will be purchased from the Colorado Division of Wildlife, as stated on pg. 5.
- N { The map in the pocket shows part of section 12, T.1N., R.97W., and part of section 6, T.1N., R.96W., with a blue pattern indicating Superior mineral ownership. This land is actually owned by Carter Oil Company.

John R. Donnell
John R. Donnell, Chief
Oil Shale Section
Branch of Chemical Resources

RESPONSE TO 5 a

Response to Comment Letter 5a

Geological Survey

- A. The area outlined on Map 1-1 (page 2) and 6-1 (page 78) is a topographic region used in the impact assessment. It was not intended to portray the entire Piceance Basin oil shale area as typically defined in geologic terms. The area is confined by topography and generally coincides to a BLM planning unit and a Colorado Division of Wildlife Management Unit. This provides baseline information plus a logical basis for comparison regarding magnitudes of potential impacts. Also, any activity within the defined region would potentially affect the same resource components as would the Superior proposal. Outside that boundary, impacts would affect different components.
- B. A comparative physiographic description between the Colorado and White River drainages was not included because it does not affect potential environmental impacts nor was it felt that such a description added to the understanding of those impacts identified. Descriptions of the two drainages are found in the primary references for the geology description (page 42, left column, third full paragraph, second sentence).
- C. The approximately 1,200 billion barrels of oil equivalent is contained in the entire basin.
- D. The 2,500 feet of sediment includes only the Green River formation.
- E. The Douglas Creek member lies below the Garden Gulch member but was not discussed since it would not affect potential impacts of the proposed Superior project.
- F. Essentially all members in the Green River formation contain some oil shale. However, only the Parachute Creek member would be affected by the proposal.
- G. See Errata-Item G1.
- H. See Errata-Item G2.
- I. See Errata-Item G3 regarding the outcropping of the Leach zone. The limits of the leach zone shown in Figure 2-1 are stated as "estimated" in the environmental statement (page 42, right column, third paragraph, third sentence).
- J. The equivalent gallons per ton is very important in determining values of the land parcels proposed in the exchange. However, it is not relevant to assessment of impacts in the environmental

RESPONSE TO 5 a

statement.

- K. Estimates on domestic consumption of oil varies between 16 and 20 million barrels per day. Using the consumption figure of 18 million barrels, as suggested, Superior's proposed production still amounts to about a 5-day supply (page 68, left column, first partial paragraph, first sentence).
- L. Lands that would actually be exchanged will be specified following, among other activities, an appraisal of values. And, only if the values are equal or can be equalized by cash payment by Superior will an exchange take place (page 3, left column, second full paragraph, second sentence).
- M. Map 1-2 does not, by horizontal-ruled pattern alone, show specifically and distinctively that the surface would be purchased from the Colorado Division of Wildlife (CDW). The areas that Superior would purchase are shown by color code and crosshatch. The blue areas are those where Superior owns the mineral estate and CDW the surface. Diagonal crosshatch show that the area Superior would purchase surface and exchange with BLM. The horizontal crosshatch show that area (400 acres) Superior would purchase on which project features would be located.
- N. According to the records of the Rio Blanco County Assessor, the ownerships as shown on Map 1-2 are correct. Carter Oil Company did, at one time, own the surface on those areas mentioned in the comment. However, the Colorado Division of Wildlife now owns those parcels.



United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA 22092

In Reply Refer To:
EGS-DES-79/40
Matl Stop 760

17 SEP 1979

Memorandum

To: State Director, Bureau of Land Management
Denver, Colorado

Through: Assistant Secretary--Energy and Minerals
SEP 10 1979

From: Director, Geological Survey

Subject: Review of draft environmental statement for proposed Superior
Oil Company land exchange and oil shale resource development

We have reviewed the draft statement as requested in your notices.

A { The statement should assess the potential for hydraulic fracturing during
reinjection of mine water under pressure and indicate appropriate plans
for operating procedures and pressures, if needed.

A few minor comments, mostly editorial, are presented in the enclosure.

Enclosure

H. William Menard



One Hundred Years of Earth Science in the Public Service

DES-79/40

USGS Comments

B { It would be useful to refer to Map 1-2 in the section on Land Exchange (p. 5).

C { It is stated that "Materials to be backfilled in the mine would be carried
on the reverse side of the conveyor belts" (p. 11, col. 2, par. 4), but
figure 1-7 does not appear adapted for this purpose; the proposed scheme
should be clarified.

D { It is stated that "Approximately 380 acres of land would be required for
the proposal" (p. 28, par. 2) and the total acreage shown in table 1-8 is
380 acres. However, it is stated later that "Approximately 435 acres would
be required for the project--380 acres for the mine and plant (Table 1-8)
and 65 acres for solid waste disposal" (p. 91, par. 3). It would be advis-
able to include this 65 acres for solid waste disposal in the figures given
on page 28 and in table 1-8, and the total acreage should be 445 acres
which is in close agreement with the figure of 444 acres given on page 76
(col. 2, par. 3).

E { The first sentence of the section on Geology and Minerals (p. 67) reads
as if 237 million tons of coal would be required to produce 40 million
tons of nahcolite. This should be restated to something similar to "The
use of 40 million tons of nahcolite would allow 237 million tons of 3 per-
cent sulfur coal to be burned by an electric utility."

F { Figure 1-2, referred to on page 68 (col. 2, par. 5), has been omitted.

It would be useful to indicate on the cover and title page and in the
Summary that the project is located in Colorado.

RESPONSE TO 5 b

Response to Comment Letter 5b

U.S. Geological Survey (Reston, VA)

- A. There is insufficient information to assess any potential effects of reinjection of mine water. The Colorado Water Quality Control Division would consider, in detail, this subject prior to issuing a Subsurface Disposal Permit (Reference: page 3, right column, fifth full paragraph).
- B. When Map 1-2 is first introduced (Reference: page 5, right column, fourth full paragraph, fifth sentence) it is noted that the components of the land exchange are shown on that map and suggests that the map and schedule (Figure 1-2) "... be referred to while reading the narrative."
- C. Figure 1-7 is a schematic drawing only. Its purpose is to give the general reader an idea of what the overland conveyors look like.
- D. The 380 acres of land that would be required is the amount that Superior proposed. Chapter 1 consists of only the proposal that Superior gave BLM. Subsequently, this proposal was analyzed and it was found that another 65 acres would be required (Reference: page 54, left column, third full paragraph). Superior committed to dispose of its waste at the project site (Reference: page 73, left column, second paragraph). As a result, the total land requirement would be about 445 acres. Also see Errata-Item VI.
- E. See Errata-Item 05.
- F. Figure 1-2 is located in the packet attached to the inside back cover (Reference: page 5, left column, fourth full paragraph, fifth sentence).

COMMENT LETTER 6

UNITED STATES OF AMERICA
GENERAL SERVICES ADMINISTRATION
Public Buildings Service
Washington, D.C. 20405



AUG 15 1987

Mr. Dale R. Andrus
State Director
Colorado State Bank Building
Department of the Interior
1600 Broadway, Room 700
Denver, Colorado 80202

Dear Mr. Andrus:

The General Services Administration has reviewed the draft environmental statement for the Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development, and have no substantive comments to make.

Thank you for the opportunity to comment.

Sincerely,

CARL W. PENLAND
Acting Director
Environmental Affairs Division

Keep Freedom in Your Future With U.S. Savings Bonds

COMMENT LETTER 7

Advisory
Council On
Historic
Preservation

1522 K Street NW
Washington D.C.
20005

Reply to: P. O. Box 2465
Denver, Colorado 80225

August 9, 1979

Mr. Dale R. Andrus
State Director, Colorado
Bureau of Land Management
Colorado State Bank Bldg., Room 700
1600 Broadway
Denver, Colorado 80202

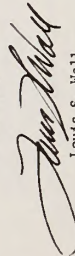
Dear Mr. Andrus:

This is in response to your request, received July 13, 1979, for comments on the draft environmental statement (DES) for the proposed Superior Oil Company Land Exchange and Oil Shale Resource Development, Rio Blanco County, Colorado.

Pursuant to its responsibilities under Section 102(2)(C) of the National Environmental Policy Act of 1969, the Council has determined that this DES does not demonstrate compliance with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat. 1320). However, it appears that the Bureau of Land Management understands its responsibilities and will carry them out in the future. The BLM should be aware that an adequate mitigation plan, prepared for the anticipated effect on archeological sites determined eligible for inclusion in the National Register of Historic Places, should provide that all data recovery, analysis and publication of archeological reports should be completed prior to transfer of the property to Superior Oil Company, and that BLM is required to afford the Council an opportunity to comment on the undertaking pursuant to Section 106 of the National Historic Preservation Act, as amended, prior to approving the transfer.

Should you have any questions, please contact Mrs. Jane King of the Council's Western Office at P. O. Box 25085, Denver, Colorado 80225, or at (303) 234-4946.

Sincerely,



Louis S. Wall
Chief, Western Division
of Project Review

RESPONSE TO 7

Response to Comment Letter 7

Advisory Council on Historic Preservation

A. BLM is currently taking those steps outlined in the comment. As invited in the letter, Mrs. Jane King was contacted and questioned regarding the statement. . . . We completed prior to transfer . . . It was Mrs. King's interpretation that this statement be defined as prior to surface disturbance by Superior, which BLM plans to carry out.

COMMENT LETTER 8



DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

REPLY TO
ATTENTION OF
SPKED-W

21 August 1979

79 AUG 27 NO 10

State Director
Bureau of Land Management
Colorado State Office
Room 700, Colorado State Bank Building
1600 Broadway
Denver, Colorado 80202

Dear Sir:

The draft environmental statement (DES) for the Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development has been reviewed as it relates to Corps of Engineers' projects and regulatory responsibilities in the area.

The Corps of Engineers has no flood control, navigation, or other water resource developments that would be affected by the proposed action. The DES gives recognition to flood plain management in accordance with Executive Order 11988. The need for a Department of the Army Section 404 Permit for river and stream crossings under the Clean Water Act (33 USC 1344) has been included, and coordination has been initiated with our field office located at Grand Junction, Colorado. You should be aware that Sections 10 and 103 of the Clean Water Act are not applicable for work in this area. Consequently, the statement on page 3 concerning the need for a Corps of Engineers permit under these sections should be modified accordingly.

We have no other comments but appreciate the opportunity to review the draft environmental statement.

Sincerely,

GEORGE C. WEDDELL
Chief, Engineering Division

RESPONSE TO 8

Response to Comment Letter 8

Department of the Army

A. See Errata Sheet Item A.

COMMENT LETTER 9

UNITED STATES DEPARTMENT OF AGRICULTURE
RURAL ELECTRIFICATION ADMINISTRATION
WASHINGTON, D.C. 20250

SUBJECT
Proposed Superior Oil Company Land
Exchange and D11 Shale Resource
Development Draft Environmental Statement

TO
U.S. Department of the Interior
Bureau of Land Management
Colorado State Office
Room 700, Colorado State Bank Building
1600 Broadway
Denver, Colorado 80202

The Rural Electrification Administration (REA) would like to offer the following comments on the subject Draft Environmental Statement:

- A** 1. The document does not assess the possible air or visibility impacts on Dinosaur National Monument which lies 30 miles to the northwest of the oil shale development area. It should be noted that the Dinosaur National Monument is a Class I Air Quality Area.
- B** 2. In Section 6, it should be noted that the Moon Lake Project is as of yet unsited. Four of the five major siting areas lie in the State of Utah. The remaining major siting area lies northwest of Rangely, Colorado, as shown in map 6-1. Although REA has not made a final decision regarding the siting of the Moon Lake Project and will not until the issuance of a Final Environmental Impact Statement, it is likely that the REA borrower for this project, Desert Generation and Transmission Cooperative, will opt for a site in northeast Utah with a coal supply near Rangely, Colorado. Again, REA will not make a final decision on this choice of sites until after the Final Environmental Impact Statement is published.
- C** Additionally, the Moon Lake Project will tentatively consist of two 400 Mw units, one to become operational in 1984-85 and the other in the late 1990's.

REA would like to thank you for the opportunity to comment on this Environmental Statement. Should you have any questions, you can contact me at FTS 447-5755.

Charles R. Binder
for
JOSEPH R. BINDER
Director
Environmental and Energy
Requirements Division

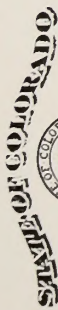
RESPONSE TO 9

Response to Comment Letter 9

Rural Electrification Administration

- A.** The Class I designation of Dinosaur National Monument has been recognized in the environmental statement and possible air and visibility impacts were assessed (Reference: page 67, right column, second full paragraph).
- B.** The uncertainty of the plans for the Moon Lake project, and all other interrelated projects, is noted in the environmental statement (Reference: page 77, left column, second paragraph, fourth sentence).
- C.** Because of the tentative nature of Moon Lake, a maximum 500 Mw unit was assumed in order to assess maximum impacts.

COMMENT LETTER 10



Richard O. Lamm
Governor
Morgan S. M.
Commissioner
Donald L. Swedman
Deputy Commissioner

Agricultural Commission
William A. Stephens, Chairman
Ben Eastman Holck, Vice Chairman

COLORADO DEPARTMENT OF AGRICULTURE

401 STATE SERVICES BUILDING
1313 SHERMAN STREET
DENVER, COLORADO 80203

Henry Christensen, Roggen
John L. Malloy, Denver
Ellen Miller, Ft. Collins
Donna M. Miller, Denver
William H. Kibbe, Greeley
Clyde Widener, Granada
Kenneth G. Wilmore, Denver

MEMORANDUM
79-582

TO: Steve Ellis, State Clearinghouse
FROM: Jim Rubright, Colorado Department of Agriculture
SUBJECT: Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development
DATE: August 27, 1979

The Colorado Department of Agriculture has the following comments on this draft environmental impact statement:

1. The impact increased traffic will have on the movement of agricultural implements and stock is not evaluated. This increase in traffic has been a serious problem in certain areas of the Western Slope. If it does appear to be a serious problem in this region, mitigation measures should be discussed.
2. The EIS states that 170 AUMs will be lost because of lost access to livestock water. Mitigation measures should be sought by Superior Oil in order to prevent additional economic hardship from occurring to the two ranching operations which will be effected by this action.

RESPONSE TO 10

Response to Comment Letter 10

Colorado Department of Agriculture

A. The effect that project traffic would have on agricultural-related uses of the highway system were evaluated and found not to be a "serious problem." Because cultivated agriculture is not intense in the project area, movement of implements would not be impaired. For a two or three week period in the spring and fall, sheep are trailed along the road system; however, like movement of implements, movement of livestock would not be hampered.

8. Mitigation measures (Chapter 4) are those committed to by Superior. The purpose of this document is to analyze the effects of Superior's proposal, including mitigation measures, which have been done in the land use section, as it relates to agriculture. BLM, with the proposed land exchange, has no means to force other measures on Superior through the environmental statement process.

COMMENT LETTER 11



COLORADO DIVISION OF MINES
DEPARTMENT OF NATURAL RESOURCES
1313 Sherman Street, Denver, Colorado 80203 Telephone 835-3401
Norman R. Blake, Director



August 9, 1979

AUG 13 1979
MR. D. LAMM

TO: Margie Kaminsky, State Clearing House
Department of Local Affairs - via Mr. Siek
FROM: Norman R. Blake, Director
Division of Mines
SUBJECT: Superior Oil Shale EIS 79-131

The Colorado Division of Mines fully supports the concept of room and pillar mining over the modified in-situ methods; but for resource recovery, safety, health and greater production we prefer the open pit mining methods where feasible. That is why the land exchange is recommended to aid in the producing of oil and other by-products from the deposit. The recovery of the by-products is sound resource utilization and will aid our nation in becoming more self sufficient as well as helping to minimize environmental impact.

To further aid in making a decision we know that if the mining is done by the room and pillar method a great amount of the oil shale will be lost; and, therefore the by-products. There will be a need to control the open ground for the safety of the employees, but experience gained and new methods developed over several years will help in the ground control. The proposed back filling of the processed shale will add greatly to the ground control and to the recovery of the shale itself. We encourage more research in the area of back filling as we feel it will aid in the safety of the underground employees and the recovery of the shale.

Due to our responsibility for the safety and health of the people who are employed on the various mine sites and our experience with large mining operations, both underground and surface, we are concerned that the present energy shortage might bring on panic development of Colorado Oil Shale which will be cause for serious and even fatal accidents.

NRB:ak

COMMENT LETTER 12



Department of Local Affairs
Colorado Division of Planning

Philip H. Schmuck, Director



Richard D. Lamm, Governor

MEMORANDUM

DATE: August 16, 1979
TO: Stephen O. Ellis, State Clearinghouse
FROM: Philip H. Schmuck
SUBJECT: DEIS on Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development

Background

The Superior Oil Company is proposing a land exchange in order to assemble an economical mining unit that would produce about 11,500 barrels of shale oil a day in addition to about 5,000 tons of nahcolite, about 600 tons of alumina and about 1,000 tons soda ash daily. Life of the project would be about 20 years and the permanent construction force would number about 920 persons. By the terms of the proposed land exchange, Superior Oil would acquire about 2,045 acres of BLM land in return for deeding about 2,570 acres of land to the Bureau of Land Management. Superior Oil Company presently owns the mineral rights on the 2,510 acres to be exchanged and would buy the surface rights from the present owner, the Colorado Division of Wildlife.

Review of the DEIS

The Bureau of Land Management has done a creditable job of analyzing not only the ecological but also the sociological and environmental impacts likely to result from the proposed project. However, the off-site land use impacts are addressed only briefly (on pages 52, 63 and 91) and not in sufficient detail. Clearly the major land use changes will result not at the project site but in the neighboring communities. Yet the draft EIS provides only passing reference to the pattern of those changes (pages 52 and 63) and the estimated land area required to provide community services for the new population (page 91). No estimate of the land area required for housing and service industry is provided--even though the land required to provide these functions is likely to exceed the land area required for either the plant facilities (435 acres) or for new community service facilities. We urge that the final EIS correct these deficiencies by examining in greater detail the off-site changes in land use patterns likely to result and the estimated off-site land use needs by jurisdiction and by land use category (such as housing, commercial, community services) that are anticipated as a result of the project.

We also urge that Chapter 4, "Mitigation", be expanded substantially from a brief description less than a page long to a full discussion of proposed mitigation measures that would address the adverse off-site social and economic

520 State Capitol Building, 1313 Sherman Street, Denver, Colorado 80203 (303) 892-2251

COMMENT LETTER 12

Stephen O. Ellis
August 16, 1979
page 2

B { impacts outlined in Chapter 3, "Environmental Impacts of the Proposed Action." The adverse public finance impacts and changed land use patterns that could result from the proposed project are by no means unavoidable, and are not listed as such in Chapter 4, "Unavoidable Adverse Impacts." But they are likely to occur in the absence of mitigating measures, a description of which needs to be included in the final EIS.

C { The Colorado Department of Local Affairs has adopted a set of Human Settlement Policies to aid in the making of public resource allocation decisions by State officials. These policies foster clustered, compact development within or contiguous to existing communities and discourage low density, strip or corridor development, and leapfrog development. If the proposed project would result in these latter forms of development, then it is contrary to our adopted Human Settlement Policies; consequently, it is important that the final EIS describe the mitigation measures, if any, that will be implemented to prevent the occurrence of these undesirable but not unavoidable land use patterns.

D { The Human Settlement Policies also discourage rates of population growth which would cause socio-economic and public fiscal disruption. The draft EIS states that the proposed project would result in adverse socio-economic impacts and would cause public fiscal deficits (costs in excess of revenues) in Garfield County, Rangely, the Rifle area school district, and the Rangely area school district. We do not in consequence recommend against the proposed land exchange, since these adverse impacts are neither inevitable nor unavoidable. But we do wish to stress that a program of mitigating measures acceptable to the various parties at interest is necessary to avoid or at least minimize--the socio-economic and public fiscal disruption that would otherwise occur.

PHS/DK/btm

RESPONSE TO 12

Response to Comment Letter 12

Colorado Division of Planning

- A. Those acreage figures given on page 91 (left column, second paragraph, third sentence) include housing and community services. Of the total 430 acres that would be required in Rifle, about 332 acres would be for housing. In Rangely and Meeker, the acreage required for housing would be approximately 112 and 276, respectively.
- B. Those measures contained in Chapter 4 are those committed to by Superior Oil. With the land exchange as proposed, BLM has no means to commit Superior, or any other entity, to carry out additional measures.
- C. There are no additional mitigating measures that BLM can implement with the land exchange proposal. As the Governor has stressed in remarks concerning the state's new Human Settlement Policies, control remains with local governments. Effects, such as sprawl, are identified in the environmental statement (Reference: page 52, right column, third and fourth full paragraphs). Controls that local governments have, through master plans, are also defined (Reference: page 38, right column, first and second full paragraphs).
- D. See response to comment B above.

STATE OF COLORADO
 Richard D. Lamm, Governor
 DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
 Jack E. Grieb, Director
 6000 Broadway
 Denver, Colorado 80216 (825-1192)



September 4, 1979

TO: Stephen O. Ellis
 Colorado Clearinghouse

FROM: Jack E. Grieb, Director
Division of Wildlife

SUBJECT: Proposed Superior Oil Company Land Exchange and
 Oil Shale Resource Development.

Various personnel from the Colorado Division of Wildlife have reviewed the above-referenced document. As the agency which will be most directly impacted by the proposal, we feel the Draft Environmental Statement is deficient in several areas.

- { Page 3: Division of Wildlife and Bureau of Land Management surface management policies are not consistent. This agency is interested in wildlife habitat and the BLM manages for multiple uses, with a consequent decrease in wildlife habitat. The change in ownership from this agency to the BLM will have a detrimental effect on the area's wildlife resources.
- { Page 3: Placement of 8000 feet of Piceance Creek in a culvert will violate the President's Executive Order 411990. The resultant loss of wetlands caused by this is not discussed in the "impacts" section.
- { Page 5: Returning the majority of the disturbed areas to agriculture would represent a significant change in land use, presently rangeland and wildlife habitat.

DEPARTMENT OF NATURAL RESOURCES, Harris Sherman, Executive Director • WILDLIFE COMMISSION Michael Higbee, Chairman
 K. Iour Redden, Vice Chairman • Sam Cuddihill, Secretary • Jean K. Tool, Member • Vernon C. Williams, Member
 James Smith, Member • Donald Fernandez, Member • Richard Dzielbis, Member

Stephen O. Ellis
 September 4, 1979
 Page 2

- D { Page 8: The environmental effects of pumping water from the White River, are not discussed.
- E { Page 13: The rail loadout facility at Rifle could have substantial impacts on the area's riparian vegetation.
- F { Page 23: It is not clear how the shale storage area will be reclaimed, i.e. will part of Piceance Creek remain in a culvert indefinitely and will the fractured conduit allow leaking of various pollutants from the shale.
- G { Page 46: The list of wildlife species is simply inadequate. The information is available from this agency. It is a documented fact that 4821 and 7383 deer were harvested in the area, not 3000 as stated in the report.
- H { Page 63: We cannot see why no carpooling or other mass transit was assumed to be the case. These techniques of transporting commuting employees have proven to reduce road kill and poaching on oil shale tract Cb.
- I { Page 71: It is our opinion that road kill of deer will be increased more greatly than estimated in the document. Further the synergistic effects of all the other energy developments should be mentioned.
- J { Page 71: All 2000 acres, from which deer will be driven, are considered to be critical winter range. This represents considerably more than 1% of the critical winter range of the Piceance Basin.
- K { Page 73: We are surprised that no mitigation measures for wildlife habitat losses, are discussed. It is our opinion that if permitted, this project will have a much greater impact on wildlife than the DES anticipates. For instance, Rio Blanco County has a record of placing new housing developments on critical deer winter ranges. The report even states that additional housing will be needed in the Meeker area.

COMMENT LETTER 13

Stephen C. Ellis
September 4, 1979
Page 3

As presented, this agency cannot support the proposal. We feel that the Expanded Resource Development Alternative would be far preferable for wildlife, although we question why 5000 acres would be needed under the alternative when less than 3000 acres would be needed under private (Superior Oil) ownership.

JRG:AFW
cc: Harris Sherman
Bob Evans
Wayne Sandfort
Perry Olson
Tom Lines

RESPONSE TO 13

Response to Comment Letter 13
Colorado Division of Wildlife

A. Effects on the area's wildlife are addressed in Chapter 3 (page 71). Actual change in surface ownership from OOW to BLM would not have a significant detrimental effect on the area's wildlife resources because:

1. The existing management situation, or policy, on the adjoining BLM and OOW lands in the project area are essentially identical. There are no boundary fences between lands administered by the two agencies and identical multiple-uses are made of the areas. And, although OOW no longer collects payments for livestock grazing, this use continues to occur on OOW lands just as it does on adjoining BLM administered land.
2. BLM would manage the 2,572 acres it would receive with the exchange for multi-purpose uses including wildlife management (Reference: page 5, right column, first full paragraph, first sentence).
3. Superior would grant OOW a perpetual surface easement on approximately 2,400 acres it would purchase from OOW (Reference: page 5, right column, first full paragraph, second sentence).
4. In addition to granting an easement, Superior would pay OOW for the land at a price at least equaling appraised value (Reference: page 3, left column, third full paragraph, third sentence).
5. With the money received, a replacement area must be obtained that is " . . . of equal market value and equal value for fish and wildlife" (Reference: page 3, left column, third full paragraph, fifth sentence). The U.S. Fish and Wildlife Service must certify that this condition is met before OOW would sell. Otherwise, the project would not proceed as proposed (Reference: page 1, right column, fifth paragraph, second sentence).

In accordance with Section 206 of the Federal Land Policy and Management Act, there exists the alternative of exchanging mineral estates only. This alternative was evaluated and presented no significant change in environmental impacts as discussed in Chapter 3 (Reference: page 93, left column, first paragraph, second sentence). That is, the impacts described in Chapter 3 for the proposal (Chapter 1) would essentially be identical with a mineral for mineral exchange.

8. Executive Order (EO) 11990 - Protection of Wetlands was not discussed because, as it would pertain specifically to the proposal, EO 11980 - Floodplain Management would have the same effect. However, EO 11990 is recognized in Volume I (see Errata-Item R).
- The approximately 8,000 feet that would be lost as aquatic habitat represents only about 3 percent of the length of the Piceance Creek (Reference: page 71, right column, second full paragraph, first sentence). Water quality is poor, with a TDS of about 2,270 mg/l (Reference: page 44, right column, second full paragraph, fifth sentence) and the creek does not support a sports fishery (Reference: page 46, right column, second full paragraph, first sentence). The creek banks are nearly barren due to the highly saline soils (Reference: page 46, left column, fourth paragraph, first sentence) and there is essentially no riparian habitat of the type that is dependent on a water source such as the flowing Piceance Creek's; primarily because of its high TDS concentration.
9. Of the approximately 380 acres that would be disturbed, 185 acres are currently in cropland and would be returned to that use. The other types of vegetation that would be disturbed, along with their relative significance, are given in the environmental statement (Reference: page 71, left column, second full paragraph, first sentence).
10. The effects of pumping from the White River with the proposal would not be significantly different from existing conditions. Superior presently pumps irrigation water through the same system. It proposes to use with the project (Reference: page 44, right column, fifth paragraph, third sentence). Effects on water resources, including Superior's proposed use of water from the White River are assessed in Chapter 5 (Reference: page 68, left column, fifth full paragraph).
11. It is not anticipated that the proposed loadout facilities at Rifle would be located between the Colorado River and the existing railroad. The proposed layout is shown in Figure 1-9 (page 14). The Colorado River would lie at the top of the page in the figure.
12. The description of how the shale storage area would be reclaimed is contained in Chapter 1 under the heading Abandonment (Reference: page 23, left column, third full paragraph).
13. Sources for a thorough listing and description of the wildlife in the area are referenced in the document (Reference: page 46, left column, seventh paragraph, second sentence).

- H. Superior's proposal, which was assessed in the environmental statement, is not to force employee carpooling or provide mass transit. Also, a maximum impact is assessed by assuming that no mass transit is available.
- I. The assumptions used to assess road kill of deer are stated in Chapter 3 (Reference: page 71, right column, third full paragraph, second sentence). This assumption was made following a search of literature for more concrete data and consultation with the OOW and others.
- J. According to the jointly prepared, BLM and OOW, Piceance Creek Habitat Management Plan (HMO) the project would not be located in critical winter range. This range is noted as Deer Concentration Areas in Map 5 of the HMP.
- K. Mitigation measures, contained in Chapter 4, are those committed to by Superior. BLM has no means to enforce other measures on Superior with the land exchange as proposed.
- Community development is, in accordance with State policy, a matter of local concern. With the strong land use controls Rio Blanco exercises (Reference: page 38, right column, first full paragraph), no further significant impacts are anticipated.
- L. The figure of 5,000 acres was used to assess potential impacts of the leasing alternative "... in order to present the maximum range of impacts." (Reference: page 96, left column, second full paragraph, third sentence).

COMMENT LETTER 14



COLORADO
HISTORICAL
SOCIETY

The Colorado Heritage Center 1300 Broadway Denver, Colorado 80203
July 19, 1979

Stephen O. Ellis
Colorado Clearinghouse
520 State Centennial Bldg.
1313 Sherman St.
Denver, CO 80203

Dear Mr. Ellis,

This is to acknowledge receipt of Draft Environmental Statement for the Proposed Superior Oil Company, Land Exchange and Oil Shale Resource Development. We anticipate review of the mitigation procedures referred to on p. 73 of the document.

DATE RECEIVED July 17, 1979 DATE DUE August 21, 1979

We find Cultural Resources have been adequately considered and meet the goals and objectives of the National Historic Preservation Act et alia and those of this Office.

Thank you for the opportunity to comment on the proposed project.

If this Office can be of further assistance, please do not hesitate to call upon ES Reviewer Betty Lefree (Office of the State Archaeologist) at 839-3391.

Sincerely,

Arthur C. Townsend
Arthur C. Townsend
State Historic Preservation Officer

cc: Dr. Bruce Rippeteau; State Archaeologist
Mr. James Hartmann; Coordinator, Historic Preservation

Adequate
Form No. 201

COMMENT LETTER 15

MUSEUM

University of Colorado at Boulder
Boulder, Colorado 80509 USA

28 August 1979

79 AUG 29 AM 11:10

Mr. Dale R. Andrus, State Director
U. S. Department of the Interior
Bureau of Land Management
Colorado State Office
Room 700, Colorado State Bank Building
1600 Broadway
Denver, Colorado 80202

RE: DES for Proposed Superior Oil Company Land Exchange and Oil

Dear Mr. Andrus:

In reviewing the DES of the above project I was especially interested in the statements on paleontology. As a student working towards a Ph.D. in geology (vertebrate paleontology) at the University of Colorado-Boulder, I have spent three field seasons in the Piceance Basin. My research involves the unit underlying the Green River Formation, the DeBeque or "Wasatch" Formation, and its vertebrate faunas.

While I found the statement concerning paleontology of the Green River Formation to be correct (p. 40) in what it said, it was somewhat prejudicial. "All these fossils are duplicated throughout the Piceance Basin and other areas" is a true statement when used in reference to what is presently known to occur in the area. However, since a paleontological survey has never been done on the Green River Formation in this area, the statement is based on ignorance. Certain areas within the Piceance Basin have produced vertebrate fossils of exceptional quality (collections at the Field Museum of Natural History) and unless a paleontological survey is done on the area, it will never be known if the site of the proposed project does not also produce important fossils.

A second major point concerning the paleontological statement (and the geological statement for that matter) is that it totally ignores the geologic unit beneath the Green River Formation. This unit, termed the Wasatch Formation in most geologic literature, and the DeBeque Formation in most paleontologic literature, has proven paleontological resources in the immediate vicinity of the proposed land exchange. The Field Museum of Natural History in Chicago, the University of Colorado Museum at Boulder, and the Carnegie Museum of Natural History in Pittsburgh have major collections from the DeBeque Formation. The Western Colorado Museum in Grand Junction and the Denver Museum of Natural History have minor collections.

continued

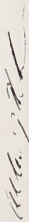
COMMENT LETTER 15

Mr. Dale R. Andrus
28 August 1979
Page two

Of these collections, the Field Museum, University of Colorado Museum, Carnegie Museum and the Denver Museum all have specimens collected from the vicinity of the proposed land exchange. Some Denver Museum specimens were collected less than 0.5 km. from portions of the proposed land exchange.

While the mining operations themselves will not affect the DeBeque Formation, the land exchange and the shale processing plant will, especially in section 2. It is strongly urged that a competent vertebrate paleontologist survey the area; at the very least, sections 1 and 2 (T.N. R97W), and hopefully the entire project area, to access the impact on the paleontological resources of the region.

Yours truly,



Allen J. Kihm
Graduate Student

1b

RESPONSE TO 15

Response to Comment Letter 15
University of Colorado Museum

A. The paleontology section (page 44) was prepared based on a search of literature. That search produced no evidence of the occurrence of fossils with exceptional interest or value that would be affected by the proposal.

B. While having "... proven paleontological resources," evidence does not reveal fossils with exceptional scientific value.



RICHARD D. LAMM
Governor

W R SMITH
Acting State Engineer

DIVISION OF WATER RESOURCES

Department of Natural Resources
1313 Sherman Street - Room 818
Denver, Colorado 80202
August 28, 1979
Ground Water (303) 833-3881

AUG 29 1979
Div. Of Planning

MEMORANDUM

TO: MARGIE KAMINSKY, STATE CLEARINGHOUSE
FROM: JERIS A. DANIELSON, DEPUTY STATE ENGINEER
SUBJECT: SUPERIOR OIL COMPANY LAND EXCHANGE AND OIL SHALE RESOURCE DEVELOPMENT ENVIRONMENTAL STATEMENT

This is to acknowledge receipt of the draft environmental statement for the above referenced development. As requested, we have reviewed the report, and the following comments are presented for your consideration:

1. With regard to water resources, we do not believe that the report has been adequately prepared or documented. Based upon these unsubstantiated estimates, the report apparently assumes that the effects of the project upon water resources are minimal and does not offer any mitigation possibilities for the reduction in stream flows shown on Table 3-28.
2. The report does not indicate how mine inflows were calculated, how aquifer characteristics were determined, or how the stream depletion resulting from the removal and beneficial use of 3700 acre-feet of water per year was determined. The statement is made (page 68) that there are no site-specific data nor site-specific simulation models for this project. However, these can be developed by the proponent if so inclined. In addition, the USGS, Colorado District, is developing both ground water quantity and quality models of the Piceance Basin which could be used to more accurately project the effects of the mine dewatering operation. Both of the Federal Oil Shale Lease operators are participating with the USGS in the development and application of these models. It would appear that the Superior Oil Company should consider participating in the development of these models.
3. In addition to stream flow depletions, the effect of lowering the potentiometric surface of the lower and possibly the upper aquifer upon the numerous spring flows in the Piceance Basin should be evaluated.

Memo to: Margie Kaminsky
Page 2
August 28, 1979

4. The water rights owned by the proponent have not been identified by name as is the normal practice. Furthermore, the well permits referred to on page 44 for 32,000 acre-feet per year are not on record with this office, which is rather unusual since we are the only agency in the state authorized to issue well permits.
5. There is insufficient evidence to prove that reinjection is feasible and if mine inflows are greater than projected, excess ground water may have to be discharged to streams or in some other way disposed of with potential environmental problems due to the high salinity.
6. The proponent will have to obtain approval by the Division Water Court for the proposed changes in use of the irrigation water right for industrial purposes and drilling purposes.
7. The design flow of the 3 conduits carrying Piceance Creek is 4500 cfs, but there is no analysis presented of the precipitation event and its frequency of occurrence which could exceed this design flow.
8. The only acceptable procedure for the proponent to gain credit for cessation of irrigation and increased runoff (Table 3-28) is through a plan for augmentation approved by the Division Water Court. The plan for augmentation would assure other water right owners and water users that the proponent's water uses would not injure them directly through reduced streamflows or springflows or indirectly through reductions in streamflows at the state line which could lead to curtailment of other water rights if the delivery requirements of the Colorado River Compact are not met in the future. The plan for augmentation, if properly designed, would also protect the proponent from possible curtailment of water uses by this office in order to deliver water to other water users or to deliver water to the state line for compact purposes.

In conclusion, we do not believe that the draft statement is adequate and must be revised considerably to fully address the above comments.

Jeris A. Danielson
Jeris A. Danielson

JAD/HDS/pjl

Response to Comment Letter 16

Colorado State Division of Water Resources

- A. The average annual reduction of approximately 600 acre-feet is about 0.1 percent of the average annual discharge in the White River (Reference: page 68, left column, seventh full paragraph). The assessment was not directed toward minimizing or maximizing impacts. The purpose is to present the data and carry it through an analysis process to the ultimate effects on the environment. Mitigating measures (Chapter 4) are those committed to by Superior. The only viable measure to mitigate reduction in stream flow was actually proposed by Superior; putting the 220,000 gallons per day of distilled water from the soda ash and alumina recovery unit into the White River (Reference: page 21, left column, fifth full paragraph, fourth sentence). However, an analysis of this proposal revealed that the water would be about 90 degrees Fahrenheit and therefore would adversely affect the aquatic life in the river system.
- B. Projected mine inflow and aquifer characteristics are based on data from the 46 core holes that Superior drilled (Reference: page 1, left column, first paragraph, second sentence). Pump tests were performed and the wells were monitored. This monitoring program has been carried out during the last 7 years. Methods used to determine . . . how the stream depletion resulting from the removal and beneficial use of 3,700 acre-feet of water . . . is stated beginning on page 68 (Reference: page 68, left column, sixth full paragraph, third sentence). Superior Oil is participating in the USGS development of . . . water quality and quantity models of the Piceance Creek Basin . . . During the analysis of effects on water resources, USGS was contacted to determine if these models could be used for the environmental statement analysis. USGS stated that the models were not ready as yet; and are to date not available.
- C. Lowering of the potentiometric surface of the lower aquifer would, to some degree, lower that of other aquifers since there is movement between aquifers in the project area (Reference: page 44, left column, fourth full paragraph, second sentence). The effect is essentially unknown due to the lack of data in the area. However, this data is part of the study reference in response B above and should be available within a year.
- D. Identification, by name, of water rights was not included because it does not affect potential environmental impacts nor the understanding of the proposal.

The well permit numbers that constitute the 32,000 acre-feet (Reference: page 44, right column, fourth paragraph, third sentence) are: 12682, 12683, 013936-F through 013939-F.

- E. Feasibility of reinjection is based on the best information available; data from Superior's core drilling program (Reference: page 1, left column, first paragraph, second sentence). Excess ground water is proposed to be disposed of by using the mine dewatering system (Reference: page 9, left column, third paragraph). Another precaution proposed would involve continuous drilling and blasting that would give indications of hydrologic conditions before a problem occurs (Reference: page 9, left column, first paragraph, third sentence).
- F. Such approval does not affect the environmental analysis nor the ultimate environmental effects of the proposal.
- G. This information is contained in the floodplain maps and accompanying report provided the state and which is also available at the BLM Colorado State Office (Reference: page 71, left column, first partial paragraph, third sentence).
- H. Legal review provided Superior regarding its water rights indicated that no additional actions are necessary to carry out the project as proposed. If the "opinions" are not valid, Superior would need an "augmentation plan" as indicated in the comment. However, this would not have a significant environmental impact nor affect those impacts already described.

COMMENT LETTER 17

RESPONSE TO 17



COLORADO DEPARTMENT OF HEALTH

4210 EAST 11TH AVENUE DENVER, COLORADO 80220 PHONE 320-8333
Anthony Robbins, M.D., M.P.H. Executive Director

DATE: August 24, 1979

SUBJECT: NON-STATE ASSISTANCE

AUG 28 1979

REVIEW AND COMMENTS

TO: Mr. Stephen O. Ellis
Colorado Clearinghouse
Division of Planning

DR. J. P. HARRIS

PROJECT TITLE: #79-131 Proposed Superior Oil Company Land Exchange and Oil
Shale Resource Development, Bureau of Land Management

STATE IDENTIFIER: NA

COMMENTS DUE BY: August 21, 1979

Yes <input type="checkbox"/>	No <input type="checkbox"/>	Is this project consistent with the goals and objectives of this agency?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Is there evidence of overlapping of duplication with other agencies?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Is meeting desired with applicant?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	A 15-day extension is requested.

Comments: Air Pollution Control -

Since this project will come under Division Permit Review procedures, we will defer major comment until that time.

A { We would like to make a minor comment, however. On Page 66, in Table 3-27, the existing 24-hour SO₂ level is stated as 133 ug/m³ and the Superior increment is shown as 10 ug/m³. The new ambient concentration is, however, listed as 90 ug/m³. This appears to be an error. This value should probably be 143 ug/m³.

50C-3, Feb 77

Name, Title & Phone
Micki Barnes, Program Administrator

ATTACHMENT B

Response to Comment Letter 17
Colorado Department of Health
A. See Errata-Item N.



State of Colorado
OFFICE OF ENERGY CONSERVATION

DENVER

RICHARD D. LAMM
Governor

BUE SEAWELL
Director

AUG 30 1979
D.D. H. H. H.

TO: Colorado Clearinghouse
FROM: Colorado Office of Energy Conservation
DATE: August 28, 1979
SUBJECT: Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development

In reviewing the Draft Environmental Statement on the Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development, the Office of Energy Conservation is concerned with the obvious omission of energy conservation issues.

The importance of energy conservation should be most evident to an energy producing industry, especially one that is experiencing an upsurge in promotion total due to the fact that fuel is in short supply in the country. This shortage, however, can not justify increasing syn-fuel development in the quick-est, most inexpensive manner with little regard to its impact. We cannot afford to be wasteful on our methods of producing more fuel and since little mention is made of energy conservation issues, we are deeply concerned that the industry is not addressing the issue seriously if at all.

Certainly the oil shale industry must realize its responsibility in conserving energy in its own operation. Not only can the company reduce its own consumption and operating costs, but it can set an example to demonstrate the advantages of energy conservation to other industries and the public.

In addition to the economic reasons for considering energy conservation in the management of oil shale development, there are certain legal constraints which, in effect, require it. The Council on Environmental Quality (CEQ) recently published final regulations implementing the procedural provisions of the National Environmental Policy Act (NEPA), 43 Fed. Reg. 55,978 (1978). Section 1502.16(e) of those regulations requires discussion, within all environmental impact statements, of the energy requirements and conservation potential of the various alternatives and mitigation measures contained in the EIS. Commenting on the intended scope of this provision, the CEQ noted:

"Subsection (e) of this section requires an environmental impact statement to discuss energy requirements and conservation potential of various alternatives and mitigation measures. One commentator asked whether the subsection would require agencies to analyze total energy costs, including possible hidden or indirect costs, and total energy benefits of proposed actions. The Council intends that the subsection be interpreted in this way: 43 Fed. Reg. at 55,984."

1600 Downing Street, Denver, Colorado 80218 (303) 839-2507

2

We must ask the question of whether oil shale development of a large scale is really necessary. Alternatives such as energy conservation and renewable energy sources can increase supplies of fuel with much less drastic impact on the environment and local social and economic structure. The fact that the oil shale industry supplies a small percentage of our country's energy needs (4% in year 2000) makes us doubt that its impact is worth the energy expended to produce it.

Further, OEC offers the following comments reflecting our concerns about incorporating conservation measures into the proposal planning process.

A { In order to increase the energy efficiency of the mining operation, we would recommend a compilation of data and a study of methods and procedures for complete energy analysis. This will aid the company in increasing the efficiency. Are the most energy efficient measures being taken? Beginning with the construction of facilities, is the equipment used energy-efficient? Are the materials used in the construction the most efficient? Has an energy analysis been made on the prefabricated buildings to be used?

B { What consideration has been given to alternative renewable energy sources such as solar, geothermal, wind biomass conversion? Will any passive solar measures be taken in the design or site location of the buildings? Will buildings be properly insulated? Will heat pumps be used at all?

C { Of the operations themselves, energy analysis should be completed on alternative oil shale mining processes. Are comparisons made to determine energy efficiency of such alternatives? The net energy table (p. 83) does not explain exactly what processes are analyzed. Are tests being made on the best drilling and blasting methods so that the most efficient configurations are blasted?

D { The equipment such as the many water pumps and electric motors should also be tested for efficiency. Is an analysis of pumps being made to compare the kilowatt hours usage of pumps against the optimum potential efficiency? And how much would this efficiency save financially? Will gravity lifts be used in any of the pumping stations? What are maintenance procedures-will worn parts be replaced frequently? Will the electric motors be analyzed for energy efficiency?

E { What power company will be supplying the power and how much will be needed by the mine and its facilities? How much additional electric power will be needed to support the additional new population growth? How much will this increase in demand raise the cost of living, and what effect will this have upon these in fixed incomes?

F { There appears to be tremendous reliance on the trucking of materials. Is this the most energy efficient means of shipping considering the volumes involved? When purchasing trucks and vehicles, will the mining company consider the most energy efficient product? Life cycle costs should determine cost efficiency. Comparisons should be made between various models to determine which rely on the least amount of energy.

G { It is stated that at first the trucks used to haul the material will be on the roads 8 hours a day/ 6 days a week, with 24 hour 365 day trucking during full operation. Trucks would be running constantly during most years of the mining, with up to 286 two-way trips on just one 17 mile stretch, and 316 two-way trips on another 17 mile stretch. Will this result in traffic congestion- what will the energy loss be from the stop/go traffic?

H { How much diesel fuel will it take to run these trucks?

I { What are the operating procedures concerning the maintenance of all vehicles? Proper maintenance and tuning would be emphasized.

J { Vehicle trips by mining personnel should be managed so that unnecessary and duplicate trips between sites are not made. Again every effort should be made to reduce work related trips.

K { Since most of the employees will be residing in Meeker (17 miles from the plant site), Rangely (38 miles) and Rifle (39) some form of ride sharing is critical. During peak periods 1329 employees will be commuting these distances to work. The fact that the roads may be able to handle the volume of traffic does not justify the waste of fuel if single occupied vehicles are permitted. Bus service should be provided to and from these sites to the neighboring towns during all shifts. Ride sharing should also be greatly encouraged by Superior Oil Company. Suggestions would include limiting parking space at the site, charging high fees for cars with only one person, reimbursing employees who do car pool, providing vans to employees who could then pay operating costs. Are any such plans being implemented? How can long distance mountain commuting of single occupied vehicles be permitted in a time of fuel shortages?

L { The impact of the industry upon the community also must be thoroughly addressed. These small rural towns can not always manage impacts of this size over short periods of time. Phased growth is most desirable in order for the towns in the area to incorporate the growth and the increase in additional services needed. The statements referring to the Master Plans for Rio Blanco and Garfield Counties do not adequately address the impact of the growth. Master plans only set very general guidelines, the Environmental Statement even states that the Garfield County Master Plan is outdated and not concerned with land use, etc.

M { It is estimated that during the productive years of operation the mining company will employ over 1300 with almost as many being hired in non-basic jobs, and that most of these people will reside in Garfield and Rio Blanco counties. Where, precisely, will new housing developments be located in relation to already existing infrastructure and what role will the applicant play in those decisions and allocation of resources? Will growth be contiguous? Will these new developments incorporate cluster housing, mixed use, bike and pedestrian pathways? Will effort be made to build homes, schools, businesses, etc. conveniently to each other so as to reduce energy consumption? Will the new buildings, both residential and commercial, employ passive solar measures? Will alternative renewable energy sources also be used on these buildings, such as solar, wind, etc.? We are attaching some standard housing comments which should be incorporated into housing as these measures would greatly reduce the consumption of fuel.

Response to Comment Letter 18

State of Colorado Office of Energy Conservation

A. There is insufficient data to carry out a "complete energy analysis." Superior Oil is at a feasibility stage in its engineering design. Only after Superior obtains an area comprising a logical mining unit (LMU) would it complete its detailed engineering design (Reference: page 5, right column, third full paragraph). Without a LMU, Superior would not have a project. In its detailed engineering design, Superior would complete an energy-type analysis. It is reasonable that the most energy and cost effective means be taken to minimize energy costs during production.

B. See response to comment A above.

C. An alternative must potentially create different environmental impacts than the proposal and be reasonably and technically available means of meeting the purpose of objectives. The purpose and objectives of the proposed project is the production of nahcolite, shale oil, alumina, and soda ash (Reference: page 1, left column, beginning with the fourth paragraph). An in-situ operation was considered as an alternative mining method but it is not technically available especially in terms of recovery of the alumina and sodium compounds.

Processes that were analyzed in the net energy analysis are contained in the cited report (Reference: page 83, right column, first paragraph, first sentence) available for review at the BLM, Colorado State Office.

D. See response to comment A above.

E. Ute Electric would supply the electric power to the project.

Approximately 738,000 kilowatt hours of electricity would be used daily (Reference: page 15, left column, first paragraph, second sentence).

Assuming that approximately one kilowatt hour per person per day is required, a maximum of about 24,000 kilowatt hours would be needed during project operation. Since there is presently capacity available to service this need, no significant increase in the cost of living would be anticipated.

F. A pipeline (Reference: page 95, left column, seventh paragraph) appears to be more energy efficient than the proposed trucking.

Based on the volumes of other products that would be produced (Reference: page 2, table 1-1), trucking appears to be more efficient than rail shipment due to the high cost in dollars and

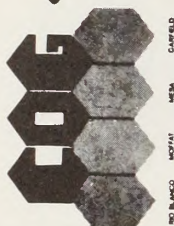
RESPONSE TO 18

energy associated with the railroad construction (Reference: page 93, right column, beginning at the first paragraph).

In regard to purchasing trucks and vehicles and their energy efficiency, see response to comment A above.

- G. Traffic congestion is anticipated (Reference: page 65, left column, fourth full paragraph, first sentence). This congestion is anticipated to be momentary only, no significant energy loss would be expected.
 - H. During operation of the project 2.2 million gallons of diesel fuel would be required annually.
 - I. See response to comment A above.
 - J. With the proposed land exchange, BLM has no means to manage work related trips by employees. A maximum number of "trips" has been assumed in assessing impacts on the highway system (Reference: page 63, right column, beginning at the fifth paragraph).
 - K. No plans are being implemented in regards to ride sharing or bus service. The impact assessment also assumes no such service.
 - L. Impacts on the communities that would be affected are included throughout Chapter 3. Environmental impacts. The effects are contained in the various sections including Socioeconomics (page 47), Highway System (page 63), and Noise (page 65).
 - M. During operation of the project, the average number of employees would be about 320 (Reference: page 24, Table 1-2). The number of non-basic employees would be over 800 (Reference: page 46, Table 3-2).
- The precise locations of new housing developments is not known. Any control over the development locations is within the jurisdiction of "local" governments. The applicant, Superior Oil, would not play a substantial role in local development decisions and allocations of resources.

COMMENT LETTER 19



COLORADO WEST AREA council of governments

79 SEP -7 AM 10

August 31, 1979

Mr. Dale Andrus
State BLM Director
Colorado State Bank Building, Rm 700
1600 Broadway
Denver, CO 80202

Dear Mr. Andrus:

This is an official joint response to the Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development - Draft Environmental Statement. At the hearing held at Meeker on August 6, 1979, comments were made by Duane Reihborg on behalf of the Rio Blanco County Board of Commissioners and by John Johnson of the Colorado West Area Council of Governments, in which both parties stated that written comments would be submitted by the extended deadline of September 7, 1979.

Please find under this same cover, those comments put together jointly by Rio Blanco County and the Colorado West Area Council of Governments.

Sincerely,

Dale W. Frisby
Dale Frisby
Chairman
Rio Blanco County Board of Commissioners

Flavien George
Flavien George
Chairman
Colorado West Area Council of Governments

:df

Enclosure

BOX 131 KREM, COLORADO 81620 TELEPHONE 303-625-1723

COMMENT LETTER 19

RIO BLANCO COUNTY AND COLORADO WEST AREA COUNCIL OF GOVERNMENTS

COMMENTS

SUPERIOR OIL COMPANY
OIL SHALE RESOURCE DEVELOPMENT
DRAFT ENVIRONMENTAL IMPACT STATEMENT

With regard to base workers generating non-base employment and subsequent income levels there is no presentation of methodology as to how those figures were derived.

The assumption that non-basic workers incomes will be \$12,830 is faulty. The current total average income in the two counties is \$10,850. This is a rural area which will not experience the same non-basic income levels that urban areas do. The income for non-base workers is also adversely effected by the likelihood of significant leakage in income from the area and inflated housing costs, thus reducing the amount of earnings and revenues to be generated and circulated within the communities.

The assumption of an 80 percent probability that the areas standard of living will increase* is highly presumptive, particularly in the absence of any suggested or proposed socio-economic impact mitigation measures. The facts in similar impacted communities suggest at best a very mixed situation with regard to the overall standard of living improvements if not an out right decline.

The report does go on to realistically state that "Those on fixed income...and government workers - would (experience) a lowering in the quality of life...(70 percent probability, or by being forced to leave the area entirely (20 percent probability)."

If the above is true, then what mitigative measures are being provided to alleviate those circumstances?

COSTS AND REVENUES

It is interesting to note with regard to costs and school facilities required that for example, one new school will be required in 1984 and another in 1990 in Rifle. Yet with regard to capital cost requirements for that community for new schools, no capital costs are indicated as being required as noted on Table 3 - 23 on P. 60. Schools needs are projected but no costs are allocated to meet those needs.

There needs to be a more definitive discussion regarding the income leakage factor. This is an area of major concern. The income leakage in the impacted area is perceived as being sizeable and if underestimated will grossly affect the area's revenue picture.

Based upon the data presented, there appears to be a gross underestimation of actual capital and O & M costs presented for each community. There are many cost areas which appear to be neglected particularly in social service and recreation areas

* (Refer to P. 52)

COMMENT LETTER 19

of community life. There is no firm discussion of what community costs are actually included in the analysis. There also seems to be a disregard for the conclusions drawn in the "Tax Lead Time Study" prepared for Region XI by Briscoe, Maphis, Murray and Lamont. That study concluded that initial capital costs under rapid growth conditions caused by energy development are major, and although revenues are produced by the energy sites, they come after the period of greatest need and cost is experienced. The Superior Impact Statement does indicate some shortfalls in and around 1984 for Meeker and Rifle, but it ignores the tax lead time problem. In addition, it fails to provide any relief or remedy to those shortfalls.

Inadequate attention is given to the disruptive nature of rapid growth of energy development upon the social fabric of the respective communities and what the associated costs might be in terms of disproportionately high levels of crime, child abuse and neglect, alcohol and drug abuse, and related social problems.

In any event, there is no way to adequately judge the public costs other than the minimal costs picture provided for basic community services that the draft presents. Thus, judgement upon the cost/revenue picture cannot be very substantive in nature.

POLICE AND FIRE PROTECTION

The first point to be made is that this issue is not even covered in Chapter 6 which discusses the cumulative efforts of energy development in the area. This is especially disappointing when one considers that public safety is usually where rapid growth impacts are first noticed. This is especially true in reference to law enforcement problems.

This was evidenced in Rifle. During the first quarter of 1978, Rifle experienced a 218% increase in crime over the same quarter of 1977. Most of this crime was in the category of aggressive person-to-person crimes. Juvenile crime also increased by a similar amount.

The ES does not adequately address the mitigation of this problem. It points out that additional officers will be required, but hiring additional officers is only a reactive action. The report does not adequately address what can be done to improve the living environment as a measure to reduce crime.

On page 54, Police and Fire Protection - This paragraph is incorrect as Meeker already has 5 policemen and 2 cars.

We also question why the amount of police required would be greater in Rangely when your report indicates many more people will live in Meeker. Basis for the argument is found in Table 3 - 8 page 51.

In general, Meeker uses the figure of 2.5 policemen /1000 capita which is lower than recommended by National Law Enforcement Agencies. Therefore there is disagreement

COMMENT LETTER 19

- M with the police figures provided, which are underestimated in the statement.
The report should have also included a breakdown in the need for police and law enforcement support and special services. When the number in the police force increases, the need for dispatchers, investigators, secretaries, etc. also increased. This is a very real impact and should be included.
- N In regard to Fire Protection found on page 54, it is stated that Rangely would need 6 trucks, Meeker 4 trucks, etc. The question is, "What is meant by 6 trucks, 4 trucks?" If average figures are used for these costs, estimates should be stated.
- O As far as Community Services and costs are concerned, there is no clear statement as what "costs" are involved. What about Public Works other than water and sewer? How do the towns and county provide the additional road graders, street sweepers, maintenance trucks, solid waste compactors, etc.? The report lacks a total Public Works cost figure. We therefore suggest that the costs figures are most probably much higher than those projected by the report.
- SCHOOLS
- P It is interesting that the ES points to the critical need for increased school facilities, but passes it off with the assumption "that other arrangements would be made for facilities instead of new building construction." This statement does not make sense in light of the fact that the report indicates that the Rifle School System will be at 111% capacity in 1984, and advance to 153% in 1995. It would be difficult at best to accommodate some 700 students in a fashion which did not involve capital construction.
- Q The ES reports that \$94,000 per year from 1982 - 2010 would have to be expended by the Meeker School District to accommodate this growth. The table presented indicates that the construction could be handled by excess revenues generated each year. This outlook is completely unrealistic. First, it does not address the problem of raising the front-end financing for construction projects, the inability of the existing residents to shoulder more in taxes, and the general feeling of existing residents that they should not have to pay for improvements to accommodate the new population. The draft is candid in its statement on page 62 regarding the school situation in Rifle and Rangely, "...the quality of education would be lowered (75 percent probability)." Yet no proposals or suggestions are made to help mitigate and adverse impact.
- R Additional Community Service Comments
Before the cost statements can be clearly understood, it must be explained how the "total" costs have been "adjusted for the impermanency of the population during project construction." The underlying assumptions cannot be determined by the information presented in the ES.

-3-

COMMENT LETTER 19

HOUSING

- U In the "Ultimate Efforts" section on page 62, the draft states "With increased employment opportunities, the scarcity of jobs and the low income situation would be alleviated." This statement is extremely simplistic and is based upon faulty analysis and conclusions. Under rapid growth conditions, service (non-base) worker employment demands are generated. In a rural setting with a large influx of people, the solution to housing primarily rests with new construction and/or mobile homes. There is very little benefit derived from the urban type situation of housing "turn over" effect.
- T Housing becomes very expensive as indeed the draft acknowledges. Since service workers are paid much less than base workers and are basically unable to compete for and afford housing, the result is that impacted communities do without adequate levels of service workers. The alternative to this situation is that service workers receive higher than normal pay. This factor may or may not have been addressed in the public cost/revenue section. There is no indication that it was. If it was not, then the logical conclusion is that the community does without adequate levels of service workers - something a normal functioning community can ill afford to do without. If the community does without adequate levels of service workers then the statement that "the overall quality of life will improve (80 percent probability)," may be incorrect. The draft goes on to correctly note that, "...competition for housing would further aggravate an already high market price (for) housing.", thus "impacting mostly those on fixed incomes". The report does not adequately address the serious nature of housing shortage impacts to be born by the impacted community who faces the service work problem as noted earlier. It again must be recognized that without adequate numbers of service workers the communities in question cannot function properly, nor can they generate the levels of income and revenue which the draft assumes will be generated.
- U It should also be noted that calculating future household needs based on existing (1977) household size ignores that fact that composition of new households formed as a result of oil shale development may be radically changed with respect to size, family relationship, age, and preference. (Page 31, Chap.2)
- V Household size multipliers should be developed that will be more relevant to the size of new households formed as a result of Superior's activities.
Calculating future housing demand by type and tenure (p. 31, 33 & 34) on the basis of the existing mix is highly erroneous and faulty. Types of housing units needed to house a transient construction work force, a more permanent operational workforce and corresponding service workers will not correspond to existing mix of housing types. Reliance on rental units, recreation vehicles and mobile homes is expected to increase at a higher rate initially in contrast to conventional single-family house. This is acknowledged elsewhere on page 52. Additionally, no attempt

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is made to relate housing costs to housing choice and how this can be a limiting factor for lower paid employees and service employees.

Attempts should be made to provide a realistic estimate of the number of housing units needed by types (single-family, mobile home, large multi-family, duplex, 4-plex, etc.) so that local officials may plan accordingly.

Housing requirements for base and non-base workers generated as a result of oil shale development should be identified and analyzed separately, as their needs will not be identical and incomes will be highly divergent.

The basic question of the effects of an influx of large numbers of persons in a small rural area with a limited housing supply, and limited capacity to increase it, on its existing and future population is never addressed as it should be. In such a situation a number of problems may arise, none of which are evaluated, projected or analyzed adequately in this report.

- Increasing land and lot prices and current prevailing prices
- Increasing rents for existing rental housing and current prevailing rents
- High rents for newly constructed rental housing
- Feasibility of new rental units to be built
- Conversion of rental units to owner-occupied units
- Displacement of lower income and fixed income households due to increase housing costs. What is the expected amount, how can it be mitigated?
- Lack of housing for service and basic workers if the local housing market cannot respond adequately to increased demand particularly for service worker housing.
- Potential speculation on developable land

If the average annual income for non-basic employees is \$12,829 as mentioned on page 50, Table 3-6, then it can be expected that significant numbers of them will experience severe pressure on their available income if housing costs rise over \$3,207 yearly. (Based on a standard of 25% of household income of housing costs.)

At least three-quarters of the service workers will not be able to afford their own conventional home based on the average income, on page 50. A significant number of non-basic workers have no choice but to purchase or rent mobile homes as will a number of the primary work force.

The implications of the presence of a large number of mobile homes in the absence of alternative housing options on the character, appearance, social life, and tax structure of the affected communities is not adequately addressed, particularly the number of lots required.

Using the standard that no more than 25% of the household income should be spent on housing, at least half of the projected service workers (those making below \$12,829

-5-

per year) cannot afford current prevailing rents for newly constructed rental units which currently range from \$300 - \$350 for a 2-bedroom unit. As construction costs, land prices, and rents increase as a direct result of energy development, many more persons will not be able to afford to live in the impacted communities. The implications of the non-availability of housing for these people are many and severe. Secondary businesses and services will not be able to attract employees to the area, will have to pay exorbitant wages to do so, or will have to subsidize or provide employee housing.

No effort is made on page 52 to anticipate how many of those persons on fixed incomes would be affected by increased housing costs, and more importantly, what possible steps may be taken to reduce or avoid this. Additionally it is expected that more than just those on "fixed" incomes would be adversely affected. Persons and families with low incomes would also be affected, single women heads of households, and households headed by handicapped persons, etc.

The statement is made on page 52 that there is a "60 percent probability" that communities will have increased costs in providing services "without gaining the full amount of revenue from these people to support their share of the cost." Why is the probability only 60%. In fact, even in managed growth situations, the growth does not pay for itself until later years. With the amount and levels of growth expected to take place in the communities it would appear highly probable (at least 95%) that revenues generated will not keep pace with the public costs in providing them. The "Tax Lead Time Study" document pointed out the problem of tax revenues not keeping pace with costs, particularly during the initial years. If, as the EIS states on page 52, mobile homes and temporary housing will be utilized, the likelihood of revenues lagging behind costs of providing services seems quite certain.

On page 82, no discussion is provided on the total number of projected rental units and owner units required. This type of information is needed in order for local officials to make residential land use decisions. It also holds major implications for the character of the town in that large numbers, perhaps as much as half of all new units constructed, will be renter-occupied. This will greatly change the character of the town and neighborhoods from that of a predominantly owner-occupied to investor-owned and renter-occupied.

Major impacts on the town's character, appearance and housing stock will be created and can be anticipated to some extent beforehand. These should be addressed and acknowledged and plans and options for mitigating them should be explored in the EIS.

Housing is an area of critical concern which is briefly acknowledged in the

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report, however, the analysis provided is minimal and the figures on the types of needs generated are based on either misleading assumptions, not provided at all, or provided only to a minimal degree.

"Mitigation" Section Chapter 4 and

"Unavoidable Adverse Impacts" Chapter 5

Summary and Conclusion:

This section proposes impact mitigation measures in only three areas. They are as follows:

1. waste disposal
2. "historic" sites
3. plants

That is totally insensitive, inadequate and unacceptable. Efforts can and should be made in the areas of housing, recreation, social adjustment, public facilities and related measures to address the equally as important concerns which happen to impact real people. Including those on fixed income, existing residents, new comers, especially service workers required to support the base workers who are generated by the project. The report states that the adverse socio-economic impacts are unavoidable. This is not necessarily the case if mitigation measures are developed to address the inadequately analyzed socio-economic impacts contained within this draft.

"Short and Long Term Relationship" Chapter C

This section goes on to state that six other energy projects are located in the Piceance Creek area. The "cumulative" cost/revenue picture that is provided points to problems in costs outweighing demand. Why aren't mitigation measures then examined, or at least suggested to reduce those impacts?

It is our opinion that they should be.

GG

TRANSPORTATION

The following comments are made in regard to transportation:

1. The transportation impacts with respect to volume to capacity relationships are representative of a moderate development of energy resources. Our investigation of the "high/high" scenarios indicates combined impacts upon the road system greater than those shown.
2. The E.I.S. (table I-4) indicates approximately 156 truck trips/day through the town of Meeker. That estimate seems probable based upon the assumptions noted in the E.I.S. However, no explanation is given for the truck distribution methodology for the bulk of the nacheolite. The intensity of impact is necessarily tied to the length of the "hauling day".
3. The alternatives section of the E.I.S. (page 95) concludes that the rail alternatives would yield a cost of hauling at \$6.50 per ton verses \$3.50 per ton for trucking. It is noted that "the figure for trucking includes amortization of equipment, and operation and maintenance costs". There is no explanation of roadway users costs or the "costs" connected with the 156 trucks through Meeker.

Our analysis has shown that product movement by truck of oil shale by-products and coal will substantially impact the roadway system both in the towns and on the required links. The rail alternative mitigation measures should be built much earlier in the timetable and not causally dismissed. It is the present attitude of the Rio Blanco County Board of Commissioners that when the required County Special Use Permit is processed through the County, there will be a requirement for alternative transportation measures to alleviate those problems.

ADDITIONAL COMMENTS

We feel very strongly about maintaining a diversified agricultural base in relation to energy development in northwest Colorado. We also feel that in order to do this the present ranch unit must be able to compete in the labor market for needed laborers. It is very clear to us that in the long run it cannot compete. The effects of this will be that agricultural unit ownership will give way to energy industry ownership and agriculture will lose. This report has not addressed this issue.

RESPONSE TO 19

Response to Comment Letter 19

Colorado West Area Council of Governments

A. The source for the average income of \$12,830 is noted in Table 3-5 (page 50). The current average incomes in the two counties is stated as \$10,850 (Reference: page 52, right column) second full paragraph, second sentence.

In the analysis it was assumed that as a result of the significantly higher average wage, Superior proposes to pay (Reference: page 24, Table 1-3), competition for non-basis labor would increase the average pay scale.

Leakage in income has been recognized and accommodated in the cost-revenue analysis (Reference: page 61, right column, first full paragraph, second sentence). Also, inflated housing costs and its effects have been addressed (Reference: page 52, right column, second full paragraph).

B. As stated in the environmental statement (Reference: page 52, left column, third full paragraph, second sentence), "With income as the indicator . . ." (underlining added) the overall average standard of living would be increased. It was recognized that by other standards the quality of life would be decreased as discussed in the section on lifestyles (page 62).

C. BLM, with the proposed land exchange, has no means to apply, or force Superior to apply, mitigating measures for the effects on socioeconomic conditions. The analysis was made on the proposal as presented by Superior Oil, Chapter 1, Unavoidable Adverse Impacts, Chapter 5, are those impacts remaining following the application of the "real and committed" mitigating measures, Chapter 4.

D. Table 2-1 (page 37) has been corrected in the Errata (Item 0) because of a miscalculation in the original work. Using the corrected figures, a new school is projected to be constructed in Rifle, in about 1990, with the trended population only (Reference: page 37, Table 2-10). With the proposed project, this same new school would be required in about 1985 (Reference: page 57, Table 3-16). The total number of schools required in Rifle would remain at five, with or without the project. Therefore, no increased capitol expenditures would be required as a result of the project; however, the one school would need to be built five years earlier.

E. The method used to determine revenue is as follows:

1. Gross incomes shown in Table 3-6 (page 50), provided the baseline for the analysis.

1

RESPONSE TO 19

2. Federal and state income taxes, plus other taxes, consume about 28 percent of gross incomes. The source for this percentage figure was the state's internal revenue statistics. A figure of 30 percent was carried forward in order to maximize potential effects.

3. The remaining 70 percent, after taxes, of gross incomes is net disposable income.

4. Of the net disposable income:

a. Forty-five percent would be devoted to local expenditures; 25 percent on housing, 15 percent for food, and 5 percent for miscellaneous expenditure. The sources for this breakdown is the "Survey of Current Business and Family Budget Patterns," prepared by the U.S. Bureau of Labor Statistics.

5. Of the local expenditures, about 40 percent are locally taxable. And, taxable expenditures times the tax rates give revenue. Other revenue sources are discussed in the environmental statement (Reference: page 61, right column, third full paragraph).

F. Factors used in determining costs are given the environmental statement (Reference: page 61, left column, fourth full paragraph). Social services and recreation facilities are inherent in the analysis (Reference: page 61, left column, first full paragraph).

Means to alleviate tax lead-time problems, with the proposed land exchange, is in the control of the local governments. Options these governments have include bond indebtedness, federal and state grants, and increased tax levies. Since there are different options available, it was assumed in the analysis that local governments would recognize the problem and take necessary corrective actions.

G. The magnitude and costs of social disruptions are unquantifiable. A discussion of the effects have been added to Chapter 3 (see Errata-Item W).

H. The types of impacts do not change with cumulative impacts; major differences are in terms of magnitude (Reference: page 77, right column, first full paragraph, second sentence).

I. See response to comment C above.

2

RESPONSE TO 19

- J. Police figures were based on 1977 conditions without interrelated projects when there was 2.2 policemen per 1,000 people. Since that time interrelated projects, described in Chapter 6, have increased the need for additional police protection.
- K. The projected number of police required is based on existing service levels. The number of police required (Reference: page 54, right column, first full paragraph, fourth sentence) (see Errata Item -).
- L. The existing level of service for Rangely was 2.1 policemen per 1,000 population, while Meeker's was 2.2 per 1,000.
- M. With the need to increase the police force in Rangely by 1, Rifle by 2, and Meeker by 4, the number of support and special services personnel would be insignificant.
- N. The number of fire trucks, 2 in Rifle, 1 in Rangely, and 2 in Meeker, is the equipment required to accommodate the projected population at current service levels. The number of trucks required would be over a 30-year period and are negligible in analyzing the overall budgets of the communities.
- O. Cost figures were taken from prior budgets and then assessed on a per capita basis (Reference: page 61, left column, fourth and fifth paragraph). Included in the budgets were community services. The analysis assumed maintained service at existing levels.
- P. Only those effects of the project over and above trended conditions were analyzed. Without the project, the same number of required schools would be required as with the project (References: page 37, Table 2-10, and page 57, Table 3-16).
- Q. See response to comment F above.
- R. See response to comment C above.
- S. The assumption underlying the adjustment " . . . for the impenance of the population during project construction." (Reference: page 61, left column, third full paragraph, fourth sentence) is that construction workers would require less community services, such as schools and welfare, than permanent workers.
- T. A disruption of other industries, which includes the service sector, has been recognized in the environmental statement (Reference: page 52, left column, second full paragraph, fourth sentence). This situation would be slightly mitigated (Reference: page 52, left column, second full paragraph, fifth sentence).

3

RESPONSE TO 19

- U. Changes in household size and mix most likely would occur; however, there is no data available that would provide insight into these changes. It was therefore assumed that the existing conditions would be carried forward in regards to housing.
 - V. Transient-type housing conditions and their effects are discussed in the environmental statement (Reference: page 52, right column, third paragraph). As shown in Table 3-9 (page 53), after about 1990, the housing market is projected to stabilize into a pattern similar to the existing housing mix. Projecting housing mixes from housing costs is not a realistic methodology. Housing costs would be a limiting factor to housing choice, especially to relatively lower-paid individuals. However, costs are more reflective of speculative demand versus construction cost. Therefore, housing must be priced so that people can afford to purchase them. There is not method to quantify the flexibility in the housing market nor to project such factors as two-income families, governmental assistance programs, and household priorities.
 - W. Projected new housing requirements and types of dwelling units required are given on page 53 in Tables 3-9 and 3-10.
 - X. See responses to comments U and V above.
 - Y. Increased land and lot prices and rental rates would be reflected in the overall increased costs of housing. Feasibility for constructing new units was assumed; no artificial barriers are presently known. It was also assumed that the market would react to housing demand (Reference: page 52, right column, third full paragraph, first sentence). Any conversion of rental units to owner-occupied units would not cause quantifiable effects. Displacement effects are discussed in the environmental statement (Reference: page 52, left column, third full paragraph, fifth sentence). The magnitude of the effect is not quantifiable and no mitigating measures are available. To be a mitigating measure in the context of this environmental statement, it must be real and committed to by a responsible entity which can carry the measure through completion. Also see responses to comments U and V above.
 - Z. Housing costs, along with other inflated cost, would put pressures on those with fixed incomes (Reference: page 52, third full paragraph).
- The rule of thumb that only about 25 percent of household income should be dedicated to housing cost appears to be no longer valid. This rate is already being exceeded in many parts of the country, including Colorado, because house costs have increased

4

substantially in relation to incomes.

AA. The effects of "mobile homes" on the communities is discussed in the environmental statement (Reference: page 52, left column, third paragraph). The area that would be required to accommodate the mobile homes are included in the overall acreage figures given as required for community services and housing (Reference: page 91, left column, second paragraph).

BB. See Response to comment Z above.

CC. The number of people that would be effected is unquantifiable. Also see Errata, item -, regarding low income individuals.

DD. The reason for the 60 percent probability is that means are available to alleviate "tax lead" problems as discussed in response to comment F above.

EE. The number of rental versus owner units is not quantifiable. This ration would depend on several circumstances, including decisions by local land-use control entities, and prevailing market and financial environment at the time. Also, see the response to comment Y above.

FF. Effects on the "town's character" are included in the section entitled Lifestyle (Reference: page 62, right column).

GG. See response to comment C above. A mitigation measure must be real and committed to by an entity having the ability and jurisdiction to carry it through. There are several measures that could be examined and suggested; however, until committed to, they cannot become a part of Chapter 4--Mitigating Measures.

HH. The "volume to capacity relationships," shown in Table 3-25, include that traffic associated with trended population and the Superior project only. Figures shown in Table 6-18 (page 87) presents the traffic associated with trended population, the Superior project, and interrelated projects. This Table 6-18 would correspond to a "high/high" suggested in the comment.

II. Truck distribution is based on proposed product haulage (Reference: page 1, right column, second through fourth paragraphs). The length of the "hauling day" are presented in the environmental statement (Reference: page 23, right column, second full paragraph, fifth and sixth sentences).

JJ. "Costs" of Superior's proposed trucking are discussed in the environmental statement (Reference: page 65, left column, third through fifth paragraphs).

KK. The alternative of railroad construction is discussed (Reference: page 93, right column). From the analysis it appears that with the production proposed by Superior (Table 1-1, page 2), the rail alternative is not cost effective; \$6.50 per ton versus \$3.50 per ton by truck.

LL. The effects of accelerating the ongoing trend from an agricultural-type life style towards an industrial-type is discussed in the section entitled Lifestyles (Reference: page 62, right column).

COMMENT LETTER 20

STATE OF CALIFORNIA—THE RESOURCES AGENCY
COLORADO RIVER BOARD OF CALIFORNIA
 107 SOUTH BROADWAY, ROOM 8103
 LOS ANGELES, CALIFORNIA 90012
 (213) 459-4480

EDMUND G. BROWN JR., Governor

August 16, 1979

Mr. Dale R. Andrus, State Director
 Bureau of Land Management
 Colorado State Office
 Colorado State Bank Building, Room 7000
 1000 Broadway
 Denver, Colorado 80202

Dear Mr. Andrus:

We have reviewed the Draft Environmental Statement for the proposed Superior Oil Company Land Exchange and Oil Shale Development and offer the following comments.

We are pleased with the decision to utilize available poor quality water in the industrial process and to dispose of waste materials including waste waters, in the mine. The reinjection in the formation to be mined of excess poor quality ground waters during the early period of development is to be commended. Such water use and disposal are in keeping with the Colorado River Basin Salinity Control Forum's policy of no-salt discharges from industrial uses. To our knowledge, this is the first such development which will result in a reduction in salinity concentration at downstream control points for the life of the project.

On page 70, the report states that the average salinity at Imperial Dam is 935 mg/l. The average annual salinity at Imperial Dam has exceeded 900 mg/l only twice since 1941, when continuous water quality records began. The average annual flow at Imperial Dam from 1961 to 1976, since closure of Glen Canyon Dam, was 5,947,000 acre-feet and the average annual salt load was 6,875,000 tons, which equates to an average concentration of 850 mg/l. In 1978, the average salinity was 812 mg/l. This correction should be made.

The benefits of reduced salinity is given as \$230,000 mg/l. The Bureau of Reclamation's recent studies have revised this value to \$243,000 mg/l. This new value should be used in estimating annual benefits to downstream users, which would amount to \$686,000.

Thank you for the opportunity to review and comment on this draft environmental statement.

Sincerely yours,

M. B. Holburt
 MYRON B. HOLBURT
 Chief Engineer

RESPONSE TO 20

Response to Comment Letter 20
 Colorado River Board of California

- A. The U.S. Bureau of Reclamation (USBR), Engineering and Research Center, was contacted in the course of responding to this comment. USBR projects 1980 conditions at Imperial to be a flow of about 7,600,000 acre-feet with a salt load of 9,062,000 tons for a concentration of about 877 mg/l. Using these numbers, the decrease attributable to the proposed Superior project remains at 2 mg/l in Chapter 3 (Reference: page 70: left column, third full paragraph, first sentence) and 8 mg/l in Chapter 8 (Reference: page 98, right column, fourth full paragraph, third sentence).
- B. According to the USBR, the findings of this new study substantiate the higher value of \$343,000 per mg/l reduction. However, this study is as yet published and the \$230,000 will be used at this time.

COMMENT LETTER 21



WYOMING
EXECUTIVE DEPARTMENT
CHEYENNE

ED HERSCHNER
GOVERNOR

August 9, 1979

Dale R. Andrus
Bureau of Land Management
Room 700, Colorado State Bank Building
1600 Broadway 80202
Denver, CO

Dear Mr. Andrus:

I am writing to comment on the Draft Environmental Statement for the Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development (Reference C0920 1792). I must first compliment those responsible for producing a concise, readable document. I hope the final statement will be as understandable as the draft. I do, however, have three suggestions for improving the document.

A { The first comment is a criticism of an overzealous aggregation of data. Figures on air emissions, for example, are presented for the entire project, including both the mining and reclamation plant segments. You are to be commended for departing from the all-too-frequent practice of dividing and dispersing figures throughout the document so that the thoughtful reader must spend hours gathering subtotals and converting units to determine the total impact of the project. Still, there are several reasons that these figures should be broken down to show the portions of total emissions contributed by mining activity and plant operation.

B { First, there are several technologies available for the reclamation of oil shale which could use the same mining operation to provide the raw material. Section 107(2) (D) of the National Environmental Policy Act requires agencies to "... study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." A discussion of other technologies, such as Paraho, TOSCO II, Union Oil, Petrosix, and others should probably be included in Chapter 8. But failing that, you should at least present figures allowing the concerned reader to compare the effects of other oil shale reclamation processes. As the statement now stands, it is difficult to determine whether other processes would even work, and impossible to compare the impacts of different technologies.

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Mr. Dale R. Andrus
August 9, 1979
Page Two

2 { The second reason is the converse of the first, in that other mining techniques, especially surface mining, are available. The reader should be able to compare the effects of other methods of extracting the oil shale. In the draft document, this comparison is impossible.

3 { The third reason is that such a breakdown would make the statement more useful in a general sense. If, for example, I wanted to determine the impact of a plant similar to the one proposed, placed in Lincoln County, Wyoming and supplied by an open pit mine, your statement would be very useful if the data on the mining segment and plant segment were separated. As it is, the draft statement is of little use in comparative studies in the oil shale industry.

4 { The specific data I recommend be broken down by mining and plant segments are contained in Table 1-2, P. 24, Table 1-3, P. 24, Table 1-5, P. 26, Table 1-6, P. 26, Table 1-7, P. 27, and Table 1-9, P. 29. Table 1-8, P. 29, is done in the manner I believe necessary.

You may also consider such a breakdown for some information contained in Chapters 3, 6, 7, and 8. This is, however, less necessary than the breakdown of the tables in Chapter 1 which I have listed.

5 { The second comment concerns an omission. The reclamation plant's rate of consumption for oil shale is apparently not given in the statement. The average daily mine production is listed on page 15, but stockpiling and different operating schedules make this figure different from the plant's rate of use.

D { I suggest you present this consumption rate in an overall materials balance sheet for the plant. Such a balance sheet should present all plant inputs, including oil shale, water, fuels, and so forth, and all plant outputs, including shale oil, nahcolite, alumina, soda ash, air and water emissions, by-products, solid wastes, and so forth. This balance sheet would make a clear, concise, and useful conclusion to Chapter 1.

E { The third comment involves the disposal of spent oil shale. Several times in the draft document, it is stated that spent shale will be disposed of in the mine. Retorted shale, however, is 10% - 30% greater in volume than the raw material. Will all of the spent shale actually fit into the mine?

I speculate that the recovery of nahcolite and dawsonite would sufficiently reduce the volume so that disposal in the mine is possible. But this speculation is neither confirmed nor denied in the draft statement. Since

COMMENT LETTER 21

Mr. Dale R. Andrus
August 9, 1979
Page Three

the problem of spent oil shale disposal has caused great concern among many people, this omission is a serious defect in the statement. Furthermore, if this project deals with the problem in an environmentally sound manner, you should announce the fact with a flourish of trumpets. To omit it is to do a disservice to Superior Oil Company, to the oil shale industry, and to the public.

I thank you for your consideration of these comments. I believe the incorporation of my suggestions into the final document will strengthen an already strong and useful document.

Sincerely,

Dick Hartman

Dick Hartman
State Planning Coordinator

Edward N. Harris
Edward N. Harris
Natural Resources Analyst

DH/EH/cjs

RESPONSE TO 21

Response to Comment Letter 21

Wyoming Executive Department - Cheyenne

- A. Data was originated by specific discrete actions and activities of the proposed project. However, aggregation of data, especially in terms of time and area, was necessary to adequately assess impacts of the entire project and not just portions of that project.
- B. Total emissions contributed by mining activities and plant operation are shown in Table 1-7 (page 27). Emissions from the underground mining operation are those included under the heading Source-Mine Vent. Additional information is included in the available air quality handout material mentioned in the text (Reference: page 67, left column, second full paragraph, fourth sentence); a copy of which has been sent to the party providing the comments.
1. The purpose of the environmental statement is to analyze the effects of the Superior proposal and not to make comparisons between other developing technologies. Other agencies, such as the U.S. Environmental Protection Agency and Department of Energy, are making such comparisons which are documented in other publications.
2. The option for surface mining with the Superior proposal is not available. Superior's proposal is dependent on the recovery of several minerals which are only deposited in the lower geologic zone (Reference: Figure 2-2, page 43). Also, above the mineral deposit is the Leach zone which essentially rules out the possibility of surface mining with today's technology.
3. Again, the only purpose of the document is the assessment of the Superior proposal. A specific parallel analysis of a similar plant would need to be made and then comparison could be made between that "other" plant and the one proposed by Superior.
4. See Response to comment #3.
- C. An average of about 20,000 tons per day would be processed by the retort (Reference: page 18, right column, third full paragraph, first sentence).
- D. As mentioned in the environmental statement (Reference: page 5, left column, fourth full paragraph, third sentence), process flow diagrams are available upon request to BLM. These diagrams include those items listed in the response. A copy of the process flow diagrams has been sent to the party providing the comment.

- E. Based on the void that would be created by mining the oil shale and the volume of processed shale and other materials to be placed back into the mine, the processed shale would, "fit into the mine."
- An average of approximately 26,175 tons of oil shale would be mined daily. (Reference: page 15, right column, third full paragraph). Average density is about 2 tons per cubic yard, leaving a void of about 350,000 cubic feet per day.
- Approximately 13,950 tons of processed shale along with 2.5 tons of sewage sludge, 1 ton of lime sludge, 127 tons of baphouse dust, and 1,100 tons of dust from crushing and screening would be backfilled daily. (Reference: page 21, right column, first and second paragraphs). Based on contact ion tests Superior has performed in a laboratory, the density of this backfill material would be between 90 and 100 pounds per cubic foot. Using 90 pounds, about 328,000 cubic feet per day would be backfilled compared to the 350,000 cubic feet of void created daily.

9-7-79

FRIENDS OF THE EARTH - COLORADO OFFICE
2239 EAST COLFAX AVENUE - PHONE 303-822-2791
DENVER, COLORADO 80206

19 10-7 1979

COMMENTS OF FRIENDS OF THE EARTH, INC. ON THE DRAFT ENVIRONMENTAL STATEMENT
FOR THE PROPOSED SUPERIOR OIL COMPANY LAND EXCHANGE AND OIL SHALE DEVELOPMENT.

Submitted by Kevin Markey, Colorado Representative

It dismayed us that nearly ten years after the passage of the National Environmental Policy Act, the Colorado State Office of the Bureau of Land Management still cannot adequately respond to the requirements of the law. The draft Environmental Statement (DES) inadequately identifies and analyzes serious public policy issues associated with the land trade, poorly assesses impacts, contains inaccuracies and virtually ignores mitigation measures. It is inconceivable to us that the Bureau has had since 1973 to evaluate this proposed action yet has not done a better job of analysis.

Congress and the President have proposed the establishment of an Energy Mobilization Board to cut through bureaucratic delays for major energy facilities, due in large part to what they perceive as citizens making outrageous demands on agencies and the use of stalling tactics. However, our only desire is to see good government. We have been concerned in the past by agency attempts to sidestep the letter and spirit of the laws governing their decisions on these energy projects. We believe that delay has been largely due to the lack of good faith on the part of these agencies in meeting their statutory responsibilities, thus inviting increased citizen concern and possibly court action. A continuation of the quality of environmental assessment found in the Superior DES can only invite continued citizen distrust and concern.

Issues or Impacts Ignored

The DES ignores several important issues in its analysis. The final must evaluate fully these problems.

1. The principal resource issue of the proposed land trade--the relative value of the Superior and BLM tracts to be exchanged--is entirely ignored by the DES. Not even the methodology to be used in valuation of the two tracts is discussed. Yet, the Federal Land Policy and Management Act requires the land trade to be in the public interest, and the Bureau claims that one major environmental advantage of the exchange is better land use management in the future. If this is the case, then the FIS must evaluate the comparative value of the land to be acquired and the land to be released. This comparison is essential to know the full extent of socio-economic impacts and benefits and to judge whether the public interest is served. As such, it must be included in the DES.

2. Superior processed shale oil has a pour point of 90°F (Ref.1) and many characteristics different from conventional petroleum crude. The DES does not question the ability to mix with conventional crude in Rangely and ship the blend in the existing pipeline. If this possibility is real, then it opens the possibility of modifications in Superior's plant or plans.

* Numbers in parentheses refer to DES pages; numbers with the notation "Ref." denote references other than the DES listed at the end of these comments.

-2-

3. Fulfilling the public interest depends in part on the success of scaling up Superior's technology and the success of marketing its by-products. The evaluation of alternatives, both from an environmental and land management viewpoint, also depends on these factors. Yet, oil production has only been tested at 2% of commercial scale and alumina/ash production has been tested at less than 2/10 of 1% of commercial scale. (1-2). Also, Superior has been unwilling to guarantee that it will proceed with the test of its technology if it obtains the land exchange." (Ref. 2).
4. The proposed action includes the cancellation of the previous withdrawal of public land. It is not stated whether land acquired by BLM will be withdrawn. If it is not withdrawn, additional impacts may accrue.
5. No evaluation is made of the likelihood or impacts of required additional pipeline construction if the Superior shale oil production saturates the capacity of the Rangely pipeline in conjunction with other shale oil or conventional petroleum development in the area.
6. The dawsonite zone to be mined by Superior has large amounts of methane (Ref. 3) and potentially high amounts of hydrogen sulfide (Ref. 4). Either or both gases affect miner health and safety and the costs and viability of dawsonite zone mining. These have not been evaluated by the DES.
7. The DES asserts that ambient air quality and prevention of significant deterioration standards are met by Superior. It is not clear that best available control technology will be used by Superior. The sulfur dioxide emission rate is substantially higher than the emission rate proposed by the much larger Colony Development Operation (347 avg. lbs./hr. for 12,000 bbl./day compared to Colony's 282 avg. lbs./hr. for 47,000 bbl./day). (27, Ref. 5). There is no off-gas stream flow analysis or description in the DES, so it is not possible to determine if controls are used. If they are not used, obviously BACI is not met. If controls include nahcolite scrubbing, then the effectiveness of such controls is called into question.
8. There is no evaluation of toxic trace elements present in spent shale or in project effluents.
- Inaccuracies, Confusions, Other Inadequacies.
1. It is not clear what percentage of electric power will be generated on or off the tract.
2. In general, the description of the process is oversimplified to the extent that it is confusing and incomplete. Components are not adequately interrelated. It is difficult to jump between diagrams and the text to obtain stream flow quantities. There is no gas stream flow description which includes details of pollutant generation and control. The water management plan is incomplete or confusing.
3. The source and values of population and indirect employment multipliers is neither explained nor justified. For commercial operations, the direct-indirect employment multiplier is 0.9. Direct employment population multiplier is 2.01 and indirect employment multiplier is 2.48. Direct employment-total new population multiplier figures to be 4.24. Some of these, particularly the direct-indirect multiplier, appear to be low. (See Ref. 6). During operations direct/indirect multiplier is more likely 1.5). Explanation and more detail is necessary. Cumulative population estimates suffer from these problems.

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4. It is not clear from the process description the reasons for salinity reduction, including what happens to process water, residual salts, non-sodium salts, etc.
5. The inventory of "Interrelated Projects" is not complete, therefore the cumulative impacts are understated. Additional oil shale projects include at least Colony, Union and Multi-Mineral. Additional coal projects include at least one mine near Rangely to supply the coal for Moon Lake's power plant, additional mines south of Yellow Jacket Pass, and production projected by the Northwest Coal FIS. These must be included.
- Inadequate Mitigation Assessment
- The two-thirds of a page discussion of mitigation measures is entirely inadequate.
1. The Bureau must consider not only mitigation measures intended to be used by the applicant or agreed to by the applicant. It must evaluate and identify potential mitigation measures by its own initiative. It must identify mitigation measures which other agencies (including state bodies) may apply to reduce environmental impacts.
2. In particular, it is puzzling why the DES goes into such great detail on the socio-economic impacts of the proposed action and project, and then avoids any discussion whatever of the mitigation measures which might alleviate the impacts. For example, it finds a geographically unbalanced revenue pattern (52), but does not recommend revenue transfer actions to alleviate this problem.
3. It accepts uncritically the technology and control measures (or lack thereof) proposed by the applicant and does not evaluate the application of other more effective control technologies.
4. It does not consider conditions or stipulations of land exchange or leasing arrangements which may ensure less environmental damage.
- Alternatives Not Adequately Evaluated
- The heart of the NEPA process is the identification and evaluation of action alternatives. The alternatives section in the DES is almost an afterthought which does not even qualitatively compare--on an equivalent or unbiased basis--the alternatives it identifies.
1. Clearly the most important action alternative is the granting of a non-competitive lease to Superior. The analysis of this option is flawed in several ways. It is biased by establishing a 5000 acre lease tract, rather than simply leasing the 2,045 acres desired by Superior. BLM vacuously claims that leasing will result in a non-compact mining unit, when the use of a 5000 acre lease could consolidate a compact LMU. Most important, it ignores several advantages of a leasing arrangement:
- The revenue from the lease sale and royalties--some of which will go to the state--may be used to mitigate socio-economic impacts.
 - A lease can prevent speculation (Superior refuses to guarantee that it will proceed with its plans) and may be designed to assure diligent development.

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- Q1 { - A lease will ensure an adequate return to the public for a public resource. The trade, based on information on resource analysis to date, may not guarantee a fair deal.
- It may be easier to establish environmental conditions and stipulations on a lease than with a land exchange. The Department of the Interior is fond of the environmental protections established under the Prototype Oil Shale Leasing Program. It may be advantageous to apply these conditions on a technology not included in the prototype program.
- R { 2. Similarly, it is possible to establish a competitive lease which restricts the use of technologies to those which may extract all minerals. There is at least one other firm considering a multi-mineral extraction method.
- S { 3. The alternative of placing conditions on the land exchange should be evaluated.
- T { 4. One condition on sale or lease or trade which may be considered is the siting of the processing plant and ancillary equipment on the plateau rather than in the valley. The mine adits may remain where currently planned, but plant siting as described may:
- Allow continued agricultural production.
 - Avoid siting of soil piles and other facilities in the flood plain.
 - Result in better air pollutant dispersion.

References.

1. J. Knight and J. Fishbeck, "Superior's Circular Grete Oil Shale Retorting Process and Australian Rundle Oil Shale Process Design," in 12th Oil Shale Symposium Proceedings, 1979.
2. U.S. Senate, Committee on Energy and Natural Resources, Subcommittee on Energy Production and Supply, "Oil Shale Land Exchange," Pub. No. 95-36, 5-24-77.
3. R. Vinson et al., Methane Encountered at the Bureau of Mines Oil Shale Shaft, in 12th Oil Shale Symposium, 1979.
4. E. Grossman, "Progress and Problems in Shaft Sinking at Tract C-A," Ibid.
5. Environmental Protection Agency, "50 Conditional Permit, Colony Development Operation, 1979.
6. C-b Shale Oil Project, Socio-Economic Assessment, 1976.

RESPONSE TO 22

Response to Comment Letter 22

Friends of the Earth

- A. No significant socioeconomic effects, especially locally, would occur as a result of the evaluation of the tracts of land proposed in the exchange. The exchange would be processed in compliance with Section 206 of the Federal Land Policy and Management Act (Reference: page 3, left column, second full paragraph).
- The environmental statement (ES) is not the decision document regarding the proposed land exchange. Instead the ES is part of a "case file" that also includes the land and mineral appraisals, title information and other pertinent information. This file is public information and open to public review.
- B. The ability to "ship the blend in the existing pipeline" was investigated as a part of the overall analysis of the proposed project. Excess pipeline capacity from Rangely to existing refineries is available. The Rangely oil field is in secondary and tertiary recovery stages. Shale oil would blend in all proportions with "conventional petroleum crude." Only that amount of crude necessary to reduce the pour point would be blended.
- Normal flow in pipelines is plug flow and not a continual blending process. It is anticipated that the shale oil with its blended crude would be transported in a lot and not continually blended. Commercially available additives could also be used instead of "blending."
- C. Those lands "acquired by BLM" from Superior would be withdrawn from lease and disposal (Reference: page 3, left column, first full paragraph).
- D. Sufficient information is not available to assess the need for and construction of a "new" pipeline out of Rangely. It is not valid to assess the need on the information available on interrelated projects because of the lack of definite information (Reference: page 77, left column, second paragraph). If, in the future the need develops, specific compliance with the National Environmental Policy Act would be required since a federally granted right-of-way would be required.
- E. There is no information available that suggests that the zone to be mined is not minable. Gaseous conditions most likely could occur. However, it is not anticipated that the condition could not be corrected by conventional means such as design of the ventilation system. There are several laws and regulations directed towards miner health and safety which are enforced by the U.S. Mine Safety

RESPONSE TO 22

and Health Administration and Colorado Division of Mines. There is also no reason to believe that these agencies would not be effective in their enforcement.

- F. Best Available Control Technology (BACT) was not employed in the emissions modeled and therefore represents potentially maximum impacts. BACT would be required in order for Superior to obtain its Prevention of Significant Air Quality Deterioration permit (Reference: page 3, right column, second full paragraph). "off-gas" stream flows are contained in the available block flow diagrams (Reference: page 5, left column, fourth full paragraph, third sentence). Nahcolite is not proposed by Superior for "scrubbing."
- G. These elements were evaluated during the impact assessment process and no significant impacts were assessed. The information evaluated is made available to others for their review in the block flow diagrams referenced in response to comment F above.
- H. No electric power is proposed to be generated with the proposal. The power would be purchased. Diesel powered generators would be used for emergencies only.
- I. The information sought is contained in the available block flow diagrams referenced above in response to comment F.
- J. Basis for population projections are contained in Chapter 2 (Reference: page 31, left column, fourth paragraph) and Chapter 3 (Reference: page 47, left column, third paragraph, fourth sentence). Identical methods were used in determining "cumulative population" (Reference: page 77, right column, second full paragraph, third sentence).
- K. The reason for salinity reduction is contained in the Water Quality section of Chapter 3 (Reference: page 70, left column, first full paragraph, third sentence). Operation of the proposed process water system is diagrammed in Figure 1-1A (page 6).
- L. Interrelated projects that are discussed in Chapter 6 are those felt having a reasonable probability of becoming operational within a reasonable time frame. The time frame used was 1985. Several other projects have been discussed but are more of a speculative or research nature and without a sufficient detail or surety to assess potential effects.
- M. Chapter 4, Mitigation (page 73), contains only those measures committed to being carried out by an entity with the means and jurisdiction to do so. There is an unending list of "possible"

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RESPONSE TO 22

measures that could be applied. The listing of such uncommitted measures, even though some may eventually be applied, serves no use in assessing impacts.

- N. BLM does not have the means to mitigate such impacts with the proposed land exchange. Also, see response to comment M above.
- O. The technology and control measures were evaluated during the assessment of the proposed project. More efficient controls have been estimated and are contained in the available handout material referenced in the environmental statement (Reference: page 67, left column, third full paragraph, fourth sentence). Modeling was originally carried out on the data Superior submitted. Since these results presented maximum potential impacts which were within reasonable compliance with established standards without Best Available Control Technology, the new estimated numbers were not later modeled.
- P. BLM, in accordance with section 208 of the Federal Land Policy and Management Act, does not have statutory ability to apply such terms, covenants, conditions, or reservations to land exchange patents.
- Q. Granting of a non-competitive lease is a viable alternative to the proposed land exchange as is the no action alternative. The environmental statement is not a decision document but only presents the proposal, alternatives to that proposal, along with potential effects on the environment. Other factors, including the comparative values of the land parcels (Reference: page 3, left column, second full paragraph, second sentence), would be weighed along with environmental consequences before a decision is made.
A 5,000-acre lease is described and analyzed "... in order to present the maximum range of impacts" (Reference: page 96, left column, fourth sentence). The Secretary of the Interior has the latitude to lease up to 5,120 acres. The 5,000 acres is a logical mining unit in that it would support the facilities described in the alternative. These facilities, in turn, were sized to accommodate the estimated mineral reserves of the 5,000 acres and to maximize impacts.
1. Estimated public revenues from the lease alternative were included in the cost and revenue analysis. A lease would, as suggested, "prevent speculation" because of diligent development stipulations that would be part of the lease. It is anticipated that the lease alternative "... would be carried out similar to the prototype program ..." which has established "environmental conditions."
- R. Superior proposes to "extract all minerals."

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- S. See response to comment P above.
 T. The location, timing, and purposes of project features were analyzed (Reference: page 93, left column, first paragraph).

Public Lands Institute

Incorporated

1740 High Street, Denver, Colorado 80202
 Telephone: 303 488 4177

September 7, 1979

Mr. Dale Andrus
 Bureau of Land Management
 1600 Broadway
 Denver, CO 80202

COMMENTS ON DRAFT ENVIRONMENTAL STATEMENT FOR THE PROPOSED SUPERIOR OIL
 COMPANY LAND EXCHANGE AND OIL SHALE RESOURCE DEVELOPMENT

Dear Mr. Andrus:

The Public Lands Institute appreciates the opportunity to comment on the draft Environmental Statement for the subject proposal. We would especially like to commend your staff for making available background information on the proposed project and their assistance. Their courtesies have greatly aided our ability to review this statement.

This Environmental Statement has massive problems because it does not meet the procedural requirements of the National Environmental Policy Act or the guidelines and regulations of the Council of Environmental Quality, and it provides little, if any, substantive material for the decision maker, the affected agencies and the concerned public.

A substantial amount of analysis and rewriting will be required to correct these deficiencies - so substantial that we recommend a new draft be issued. We do not make this recommendation lightly because we are aware of the amount of public resources which BLM has had to expend on the effort (between \$1 and 1.2 million), and we are sympathetic to the difficulties BLM has had to contend with on this project.

The major deficiencies of concern to us are described below.

1. LACK OF REALISTIC ANALYSIS.

- A { While the Statement does provide some description of various issues, it fails to provide analysis or critical evaluation of data submitted by the company.
- B { For example, the potential for air pollution is a major concern with any oil shale facility. In the Statement, the conclusion is reached that PSD increments would not be exceeded (page 67). However, the statement confuses PSD and visibility, and while analyses of both are done simultaneously, they involve different methods and data. Further, no analysis has been performed by the Environmental Protection Agency on these matters - and that agency determines whether requirements will be met.

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COMMENTS: DRAFT ES - SUPERIOR LAND EXCHANGE
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- C { Nowhere else is there indicated the ability of the plant to meet Colorado air standards. While the kind of information is not included that would enable one to make a check of all standards, both state and Federal, Table 1-7 shows that the Superior plant will violate the Colorado emission limitation on SO₂. The limit is 0.3 lb of SO₂ per barrel of oil produced per hour. A simple computation shows that Superior will exceed this standard by 2 1/2 times.
- D { One of the primary requirements of the 1977 Clean Air Act is that facilities use best available control technology (BACT). This requirement is in addition to requirements for emission limitations and incremental standards. Nowhere in the Environmental Statement is a description provided or analysis made of Superior's compliance with BACT.
- E { Another example is the lack of information on toxic trace elements contained in water, solid waste, and air products and byproducts from the plant. Many of these substances are essentially water soluble and poison the human and natural environment in very small amounts. Table 1 in the background paper on effluent material balances distribution shows the path in the process that these elements take. In order to determine the amount of parts per million, the figures in the table have to be manipulated with the result that there are extremely high - well over toxicity - amounts of arsenic, boron, fluorine, molybdenum, and selenium, and possibly antimony and lithium. No analysis is provided of the effectiveness of the methods used to prevent these poisons from entering any water or biotic system.
- F { Yet another example is in the area of revegetation. The company proposal to revegetate its evaporative pond upon abandonment is accepted without any analysis of the potential for success. Yet, this pond will be the recipient of the water containing high quantities of many of these toxic trace elements. It may well be that federal regulations will prohibit such revegetative treatment and may classify the area as a hazardous waste dump a la Love Canal. Further, the methods for reclaiming the disturbed lands throughout the project are not described nor critically analyzed. It is simply asserted on Page 71 that the soil "would be stabilized" - that is not reclamation.
2. FAILURE TO ANALYZE AND COMPARE ALTERNATIVE PROPOSALS AND ALTERNATE PROJECT COMPONENTS.
- { The "Expanded Resource Development Alternative" (page 95) includes a 5000 acre lease tract. However, by using this alternative BLM has ignored the lease alternative it suggested to the Committee on Energy and Natural Resources of the Senate. That alternative, in testimony by George Turcott and Dale Andrus, was to lease either through competitive or non-competitive means the lands proposed for exchange. The advantages cited by Mr. Turcott were:
1. the time required to issue a lease is shorter than that required to process an exchange
 2. lease terms would include environmental protection stipulations

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- G { 3. Lease terms would include diligent development requirements A fourth advantage not mentioned by Mr. Turcott is that the government would retain control of the lands while receiving revenues for the mining of the resources. Nowhere does the alternate section analyze this alternative and compare its advantages and disadvantages to the exchange. The exchange, if carried out, would include no environmental stipulations, no diligent development requirement to protect against speculation, and no return to the public.
- In those same hearings, it was pointed out that Superior would make no guarantee or assurance that they would use this exchanged land to develop oil shale. Yet they advocate the exchange as a public benefit to test oil shale technology and to produce shale oil (pages 36 and 37). }
- H { Nowhere in the alternate section are alternative project components described and analyzed. Such components could include relocation of facilities away from the creek, alternate reclamation procedures, alternate designs to achieve best control technology, etc.
3. FAILURE TO FOLLOW COUNCIL ON ENVIRONMENTAL QUALITY GUIDELINES AND REGULATIONS.
- { The BLM project leader stated that the Environmental Statement was designed to follow the new CEQ regulations that went into affect July 30, 1979. However, this statement in no way meets those regulations, nor the guidelines that proceeded them. Instead, it seems to be a hodge-podge of selected pieces from each, but ignoring large quantities of either.
- For example, 1502.14(a) of the CEQ regulations requires rigorous exploration and objective evaluation of all reasonable alternatives. Subsection (b) requires substantial treatment of each alternative considered so that reviewers may evaluate their comparative merits. This is not done.
4. THE MITIGATION CHAPTER FAILS TO DESCRIBE MOST MEANS OF MITIGATION.
- { This chapter is a mere 2/3 of a page long. It lacks any identification of what methods BLM, Superior, and other agencies can take to mitigate the numerous impacts described in the previous chapter. Without that information, the statement fails to meet CEQ regulations (1502.14(f); 1502.16(h)).
- Respectfully submitted,
Carolyn Johnson
Carolyn R. Johnson
Mining Project Director
- 1/ Hearings before the Committee on Energy and Natural Resources, U.S. Senate, Oil Shale Land Exchange, May 24, 1977, Publication 95-36

Response to Comment Letter 23
Public Lands Institute

A. An evaluation of the data submitted by Superior was made as a part of impact assessment. Those aspects of the proposed project that potentially would have significant environmental effects were identified and impacts assessed as presented in the environmental statement. Block flow diagrams (Reference: page 5, left column, fourth full paragraph, second and third sentences) and air quality data (Reference: page 67, left column, third paragraph, fourth sentence) have been made available to the reviewers for their consideration and comment.

B. PSD increment standards and visibility are two different air quality effects. Methods used to calculate Superior's PSD increment and total new concentrations in the project are discussed and referenced in the environmental statement (Reference: page 67, left column, fifth full paragraph). The data used for the analyses are contained in Tables 1-6 (page 26) and 1-7 (page 27), and can be found in the handout material (Reference: page 67, left column, third full paragraph, fourth sentence).

EPA would perform its own air quality analysis when processing the permit for Prevention of Significant Air Quality Deterioration (Reference: page 3, right column, second full paragraph).

C. Applicable federal and state standards are given in Table 3-27 (page 66). The 0.3 pounds of SO₂ per barrel of oil produced standard applies to oil shale retorting facilities only. Since Superior proposes to also produce nahcolite, alumina, and soda ash, it was assumed that Superior would be treated as four separate facilities. This concept has been generally upheld during meetings on this subject between Superior and state personnel. Provisions are made in Colorado House Bill 1109 for such a request to the air quality hearings board that the standard be applied differently if there is a difference in facilities, as with the proposed Superior project.

D. When applying to the Environmental Protection Agency for Prevention of Significant Air Quality Deterioration Permit (PSD), Superior would show that Best Available Control Technology (BACT) would be used (Reference: page 3, right column, second full paragraph). The air quality analysis presented in the environmental statement was based on data Superior provided from its feasibility-level engineering data. The effects then are considered maximum. An estimate of air emissions from the proposed project applying BACT are included in the available air quality handout material.

E. An analysis was made of Superior's proposed "control" measures during analysis of potential impacts. Only those elements of the project that would produce significant impacts are contained in the environmental statement; however, the data are available through handout materials and references that allow reviewers the same data BLM used.

F. The process water storage basin is proposed to be lined with an impervious man-made material (Reference: page 11, left column, second full paragraph, third sentence). Upon project abandonment, the lining would be removed and disposed of and no "residual" substance would remain.

Proposed means to "reclaim" the area upon project abandonment which is described in the environmental statement (Reference: page 21, right column, beginning with the fourth paragraph). The discussion on page 71 is the result of the analysis of Superior's proposal for revegetation (Reference: page 71, left column, third full paragraph).

G. A 5,000-acre lease alternative was analyzed in order to present the maximum range of impacts (Reference: page 96, left column, second full paragraph, fourth sentence). If the decision would be made to lease, the Secretary of the Interior could lease no more than about 5,000 acres. Leasing of the acreage proposed in the land exchange is not ruled out and is available to the decision maker. The leasing of less acreage is possible and the corresponding environmental impacts would be lessened from those presented in Chapter 8.

If the decision would be made to lease, the program would be carried out similar to the existing prototype leasing program (Reference: page 96, left column, first full paragraph, first sentence). That program prescribes, among other items, environmental stipulations, diligent development, and lease royalties.

Since only Superior controls its particular technology, the lease would be noncompetitive (Reference: page 95, right column, eighth paragraph, second sentence). A competitive lease would mean the use of different technologies which would have different environmental effects than the Superior proposal. Therefore if a competitive lease would be let, the proposal would need to be analyzed in a new environmental statement.

The potential effects of the lease alternative can be "compared" to the effects of the exchange by referring to the impacts contained in Chapter 3 (Reference: page 96, right column, fifth full paragraph). As stated in the environmental statement, the primary differences in impacts were found to be in terms of

magnitude and duration which are shown in the respective tables in Chapters 3 and 8.

- H. Alternative project components were analyzed but were found to be either not technically available, reasonably possible, or presented no significant change in environmental impacts (Reference: page 93, left column, first paragraph).
- I. At the time of the preparation of the environmental statement, the only guidelines were contained in BLM Manual 1792. A concerted effort was made to reduce "paperwork" and word the document in terms that would aid the understanding of the general public reader. This concept follows the new CEQ guidelines (1500.4).
- J. A mitigating measure must be real and committed to by a responsible entity, as well as enforceable. Listing measures that "other agencies can take" has no force and therefore would not reduce or eliminate impacts described in Chapter 3.

Rocky Mountain Oil & Gas Association, Inc.

COMMITTEE ON OIL SHALE

779 SEP 10 AM '79

September 7, 1979

Dr. Dale R. Andrus
State Director
U.S. Department of the Interior
Bureau of Land Management
Colorado State Office
Room 700, Colorado State Bank Bldg.
1600 Broadway
Denver, Colorado 80202

COMMENT ON THE DRAFT ENVIRONMENTAL
STATEMENT OF THE PROPOSED SUPERIOR OIL COMPANY
LAND EXCHANGE AND OIL SHALE RESOURCE DEVELOPMENT

BY

THE ROCKY MOUNTAIN OIL AND GAS ASSOCIATION
COMMITTEE ON OIL SHALE

Dear Dr. Andrus:

These comments are in regard to the draft environmental statement on the proposed land exchange and oil shale resource development by Superior Oil Company on behalf of the Rocky Mountain Oil and Gas Association's Committee on Oil Shale. The Committee on Oil Shale was organized to encourage the development of a commercial oil shale industry in the United States. The Committee is deeply committed to sound economic, social, environmental and technical planning for oil shale in order to provide the nation's citizens with adequate energy supplies in an orderly, efficient manner.

Approval of this proposed draft environmental statement regarding Superior Oil Company's proposed land exchange is essential in order that Superior may proceed to develop an economical mining unit for production of shale oil, as well as the minerals nahcolite and dawsonite. The benefits to the United States in allowing Superior Oil Company to proceed in its development plans as expeditiously as possible are clearly evident, given the nation's dependence on the importation of foreign oil.

The United States is a precarious position with regard to future availability and cost of energy resources, since the United States now imports nearly half of its oil supply. The upheavals in Iran this year, resulting in diminished oil supply to the United States, were readily reflected in the decreased amount of gasoline available to the consumer. The roughly six-fold increase in the cost of imported oil in less than a decade has also been clearly recognized by the American consumer. The

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Page Two

threat to our national security and our nation's economic health, in terms of balance of trade payments, due to our national dependence on foreign oil has also received attention within the nation's highest levels of government. President Carter, in his July 15, 1979 address to the nation, has called for the development of domestic oil shale reserves as an essential means to mitigate these problems.

Within this context, we urge that you give a high priority to positive action on the draft environmental statement for Superior Oil Company.

The Committee on Oil Shale strongly concurs with the short-term and long-term benefits of the Superior oil shale development project as cited in the draft environmental statement, which are as follows:

1. SHORT-TERM -- The proposed project would provide new direct and indirect employment and income opportunity to an area with a scarcity of jobs and low-income levels. Overall, the quality of life would increase.
2. LONG-TERM -- New technology would be developed and proven for recovery of the oil shale resources. Energy and minerals from the oil shale would become more economically and environmentally feasible.

We believe that the short-term and long-term benefits clearly outweigh the possible trade-offs cited in the same section, namely that a rural, small town community would become industrial in nature.

We recognize that the NEPA regulations have undergone revision in an attempt to reduce the paperwork involved in preparing an EIS and in reducing the delay in agency action. However, a demonstration of the commitment to this streamlining effort would be the expedition of Superior's EIS proceedings and approval thereof. A rapid, positive response will not only enable Superior, a strongly committed company, to enhance this nation's energy needs through oil shale development, but will also allow Superior to perfect their technology and establish finely-tuned socio-economic and environmental programs.

While we are optimistic that action on Superior's EIS will be expeditious, we are also aware of the problems which other oil shale operators have encountered in obtaining an approved EIS necessary for the exchange of land reserves. A four to six year delay in obtaining an EIS approval has occurred in the past. We hope this costly delay in approval will not occur in regard to approval of Superior's draft environmental statement.

The Committee on Oil Shale thanks you for this opportunity to comment on the draft environmental statement of the Superior Oil Company land exchange and oil shale development.

Sincerely,

Max Eliason

Max Eliason
Chairman, Committee on Oil Shale

COMMENT LETTER 25

COLORADO COUNCIL

1740 High Street Denver, Colorado 80218 (303) 393-0218



Dale R. Andrus
Colorado Director
Bureau of Land Management
Colorado State Bank Bldg.
1600 Broadway
Denver, CO 80203

Sept. 7th 1979

Dear Mr. Andrus:

Colorado Council of Trout Unlimited (CCTU) has reviewed the BLM DES on the Proposed Superior Oil Co. Land Exchange and Oil Shale Resource Development, primarily with respect to water quality and quantity.

We find no problem with the effect of the project on water quantity. While the plans for water processing, containment, and recycling appear to our layman's eye to be reasonably protective of water quality, the complexity of the project, using relatively untested technology, does not reassure us that serious water pollution will not result. The failure of the DES to speak to the existence of substantial quantities of trace elements in the mining process suggests that that reality is being ignored.

The possibility of their release into surface water run-off or into tributary ground water must be guarded against, to the fullest extent.

Additionally the enormous amount of transportation required to distribute the many products and by-products of the total operation offer endless opportunities for accidents which could contaminate waterways with highly toxic materials. Very stringent precautions must be required to avoid spills during the transportation process and to provide for clean-up methods, should one occur.

In order to insure the fullest compliance with requirements to insure water quality, we oppose the proposed land exchange in favor of a lease arrangement, should the project be approved.

The absence of sport fisheries downstream from the proposed project in no way diminishes our interest in maintaining the historic level of quality in those waters.

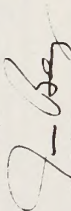
Colorado Council of Trout Unlimited (CCTU) was disappointed that the DES on the Superior project did not give some indication of the cumulative effects and unavoidable environmental effects of this project

COMMENT LETTER 25

In conjunction with others in place and/or projected for the area. We realize that a high magnitude of change must necessarily occur in order for the valuable minerals in Western Colorado to serve national needs. And we support all efforts to develop the necessary technologies and social processes that will allow those minerals to be extracted at an acceptable level of environmental and human disruption. We urge that actual development of extractive projects proceed with due caution until they can be carried out in an orderly, protective fashion. Like Middle Eastern oil, these minerals are more valuable left in the ground.

Lastly, we urge a more imaginative, thorough and complete examination of alternatives than was offered in the Superior DES.

Sincerely,



Jim Belsey
Executive Director

RESPONSE TO 25

Response to Comment Letter 25
Trout Unlimited

- A. The major and trace constituents from effluent streams of the proposed project were evaluated and no potentially significant effects were identified. The available flow diagrams (Reference: page 5, left column, fourth full paragraph, third sentence) contain the quantity and quantity of the effluent streams.
- B. Cumulative effects of the proposed Superior project plus other interrelated projects are contained in Chapter 6 (beginning on page 77). Unavoidable adverse impacts of the proposed project are described in Chapter 5 (page 75).

August 21, 1979

Mr. Dale R. Andrus
State Director
U. S. Department of Interior
Bureau of Land Management
Colorado State Office
Room 700, Colorado State Bank
Building
1600 Broadway
Denver, Colorado 80202

Dear Mr. Andrus:

During my recent visit to the BLM office to pick up some maps for hunting purposes I noticed your Draft Environmental Statement for the "Proposed Superior Oil Shale Development" and I offer the following comments:

1. The cover picture is quite deceiving and makes this area look like the surface of the moon. I think this area deserves a little more respect. I mean, what's one more crater!
2. Your "Summary" seems to be missing one important impact. What will this project do to the land? And how does this relate to the aesthetic value of the area, wildlife habitats, and most important, what will it do to the mountains? I mean lets get serious, these items deserve higher priority than deer-vehicle collisions.
I believe your summary has evaded the main issues of oil shale development and therefore is useless and deceiving.
3. Page 3. Environmental Protection Agency - this section gives the impression Superior will not be required to perform its own air quality analysis. This is false; EPA's role is only to review Superior's modelling, not do it.
4. Page 13. I would like to know if a 200 foot stack is good engineering practice (GEP) or rather is being used as a dispersion technique. Note, stacks can be sited so as not to have downwash problems from nearby terrain.
5. Tables 1-6 and 1-7 do not address fugitive dust from haul roads.
6. Table 2-13 references a non-methane hydrocarbon standard. This standard is irrelevant and has no approved test method. Just address the ozone standard.
7. On pages 65 and 66 the "Visual Resources" and "Cultural Resources" sections should be expanded greatly with artists

concepts of before and after drawings. These sections are the issues. You have done a nice job of avoiding them.

8. What are the PSD increments used during the operation of the plant? Class I and II?

9. Where's Figure 1-2?

10. Page 67. If the 96 micrograms is only a 10% probability, what are the 100% probabilities? Do these still violate the increments, even though increments don't relate to the construction activities of the proposed project.

11. Mitigation - This section should explain how BACT is being used to reduce air emissions and why it is considered BACT.

12. The plants that are threatened and endangered should be in this statement and the procedures to be worked out with Fish and Wildlife included.

13. Unavoidable Adverse Impacts - In wildlife section, please explain in more detail "removal of habitat." I think you have taken a cheap shot at hunters too!

14. Chapter 7. 13,000 deer killed in car accidents. I didn't know that many deer could drive!

15. Another issue which was not discussed was the waste materials with their cancer causing Benzo-a-pyrene. Don't you think this is an important issue? What type of mitigative measures will be taken? Isolation of contaminated water in gulches using impermeable material?

In general, I feel that with such an important and significant action taking place this Draft Environmental Statement is quite poor and misleading. And worst of all the issues most important to all coloradans, protection of the mountains, wildlife and vegetation, are briefly mentioned. I don't know how anyone could stand for this. Why don't you just admit it. The Rocky Mountains are going to be sacrificed to meet our countries energy and mineral (polydenum) needs and just eliminate the waste of an impact statement. Which gives the average laymen a false impression of security that somethings being done to protect our environment.

Finally, for people who don't know how the EIS process works, there should be a brief description in this document of what the EIS is and what a person can do with this information. For example, comment: Where does it say one can comment on this EIS. I expect to see these comments adequately addressed in the Final EIS.

Thank you,



Eliot Cooper
Environmental Engineer
5250 South Cherry Creek Drive
Denver, Colorado 80222

Eliot Cooper

- A. The picture on the front cover is not intended to be "deceptive." Its purpose is to show the relative locations of natural and proposed project features discussed in the document.
- B. Effects of the proposal, including impacts on the "land," were tiered in preparing the Summary. Accordingly, the ultimate effects on the human environment have been focused on for presentation in this section.
- C. Superior has and will continue to model air quality. Past modeling efforts of Superior have been used in assessing potential impacts in this environmental statement (Reference: page 67, left column, third full paragraph). EPA would perform its own modeling based on the data Superior provides.
- D. The approximate 200-foot stack associated with the proposed steam plant (Reference: page 13, left column, second full paragraph) is not intended to be a "dispersion technique." The height would be required for efficient boiler operation, to maintain constant suction, or draft.
- E. Fugitive dust from haul roads is included in the construction activities category in Table 1-6. Since haul roads would be paved, no emissions were projected during project operations (Table 1-7).
- F. Federal and state standards for non-methane hydrocarbons have been set (Table 2-12, page 41). Therefore, the effects of the project in relation to these standards have been analyzed (Table 3-27, page 66).
- G. "Artist concepts" for the cultural resource section were not used because they would not add to the understanding or quantification of potential impacts. While considered, artist concepts were rejected for use in the visual resource section for the same reason. However, the landscape architect that analyzed visual effects used knowledge of the proposed project layout, which is shown in Map 1-2, and mentally superimposed it onto the project site to determine impacts.
- H. Class II incremental standards were used for the project area. This is noted in the first column heading in Table 3-27 (page 66).
- I. Figure 1-2 is contained in the pocket attached to the inside back cover of the Draft Environmental Statement (Reference: page 5, right column, fourth full paragraph, fifth sentence).
- J. The range of probabilities are used to relate the possibility of the effect actually occurring (Reference: page 47, left column, second paragraph, second sentence). The magnitude, 96 micrograms per cubic meter, would not change with the probability and would exceed the allowable Class II increment. The reasons for the 10 percent probability are given in the text (Reference: page 67, right column, third full paragraph, fourth sentence).

- K. The Mitigation Chapter includes only those measures that would reduce the impacts identified in Chapter 3 and are real and committed to by Superior Oil.

Air quality analysis was made using a "worst case" situation in order to maximize potential impacts, without necessarily Best Available Control Technology (BACT). Actual data used in the analysis is available upon request (Reference: page 67, left column, second full paragraph, fourth sentence). This handout material also gives BACT for the emission sources. Before Superior would construct and operate a project, Prevention of Significant Air Quality Deterioration (PSD) permit would be obtained from the Environmental Protection Agency (Reference: page 3, right column, second full paragraph). In applying for this permit, Superior must show that BACT would be used.

- L. The four plants proposed for threatened and endangered status are found in Chapter 2, Vegetation (Reference: page 46, left column, sixth paragraph). Procedures that would be worked out with the U.S. Fish and Wildlife Service are found in Chapter 4 (Reference: page 73, right column, third paragraph). However, as noted in the Errata--Item H, a survey for these plant species was completed and none were found.

- M. Removal of habitat is broken down by acreage on page 76 (right column, fourth full paragraph). Another explanation is provided in Chapter 3 (page 71, right column, first full paragraph). The intent of quantifying new hunting pressure was not to take a "shot at hunters." Increased population in the area that would be associated with the proposed project would place additional pressure on deer and other wildlife, and necessitate even more intensive management of the wildlife resource by the Colorado Division of Wildlife, with hunting being an important management tool.

- N. The approximately 13,000 deer that would be killed by "vehicle-related" causes represent the total amount through the life of the proposed Superior project. The annual quantification of deer that would be killed as a result of collisions with vehicles on highways in the area is contained in Chapter 3 (Reference: page 46, right column, first full paragraph, third sentence).

- O. Effects of Benzo [a] pyrene (BaP) are an important issue. However, studies have shown that BaP levels in processed oil shale are lower than with many items of common everyday occurrence (Reference: "Health Effects of Oil Shale Processing" by R. Merrill Comes published in the Colorado School of Mines Quarterly, October 1976). By employing standard hygiene measures, no significant increase in cancer among Superior's employees is expected. Safety and health measures are required by law and are enforced by the U.S. OSHA and MESA.

Katherine T Millett
1223 North Weber Street
Colorado Springs, Colo
80903

79 September 3, 1979

Mr. Glen Bessinger
Bureau of Land Management
Room 700, Colo State Bank Bldg.
1600 Broadway
Denver, Colo 80202

Dear "Mr. Bessinger,

As you review the DES of the Proposed Superior Oil Company Land Exchange and Oil Shale Resource Development submittal, I hope that you will consider three areas which have not yet been fully treated: the principle of the land exchange, the cursory explanation of the proposed "muck dump", and the aesthetic implications of Superior's construction proposal.

According to Curt Smith of the BLM in Rio Blanco County and Peter Rutledge, area oil shale supervisor in Grand Junction, there has never before been a land exchange in which DOI land has become privately owned by an oil shale company. The proposed 2,045 acres were withdrawn, set aside, because that land is too valuable to the entire country to be owned exclusively by one company. Approving this exchange means challenging the lease concept which we have long adhered to, which recognizes private companies as the developers, not the owners, of essential national resources. Out of fairness to the companies which already hold expensive federal leases and out of concern for the nation's future oil supplies, we must carefully consider the implications of this proposed exchange.

On the map that accompanies the draft a 64-acre muck dump is indicated. What is muck? Would it really spill into Piceance Creek as shown? Obviously more detail is needed on the map and in chapter 5.

Aesthetic considerations are important in a visually unspoiled area like the Piceance Creek Basin. So far, buildings and equipment have been effectively hidden, built behind hills and away

C { from public roads. Superior proposes to put all of its surface retorting equipment, its silos, tanks and muck dump right next to one or both of State Hwy 64 and Piceance Creek Road. Surely other sites could do as well.

Superior presents an admirably efficient mining and retorting plan. We should see that plan implemented in keeping with wise policies of land management and with maximum care for the surrounding area.

Sincerely yours,

Katherine T. Millett

Katherine T. Millett

A. Land exchanges, such as that proposed by Superior, are considered in compliance with Section 206 of the Federal Land Policy and Management Act (FLPMA). Authority for revoking the withdrawal by the Secretary of the Interior is contained in Section 204 of FLPMA (Reference: page 3, left column, first and second full paragraphs).

Approximately 20 percent of the Piceance Creek Basin oil shale is in private ownership (Reference: page 36, right column, sixth paragraph). And Superior presently owns the oil shale acreage it proposes to exchange. This acreage, like the public oil shale holding, is within the withdrawn area. An exchange would only be made if, among other things, the private and public tracts are equal in value.

An exchange would not affect the two oil shale tracts presently leased and being developed (Reference: page 77, left column, third paragraph).

B. Muck is the rock excavated in mining (Reference: page 9, left column, first paragraph, seventh sentence). The muck pile is 13-acres in size and not 64 (Reference: page 9, left column, second paragraph, second sentence).

C. Alternative locations for project features were evaluated (Reference: page 63, left column, first paragraph, third sentence). Other locations were not found to be reasonably possible, primarily because of terrain restrictions as related to the required integration of project facilities.

ORAL TESTIMONY FROM THE PUBLIC HEARING
ROBERT KING, MEEKER SCHOOL SUPERINTENDENT

1	order to assure that everyone is treated in an equal manner.	5
2	To the extent that time is available after the presentation of	
3	oral statements by those on the list of speakers, we will give	
4	others present an opportunity to be heard.	
5	If there are any parties who are not on the speakers list	
6	who desire to be heard, they should register at the registration	
7	desk inside the auditorium, and, incidentally, if there is	
8	anyone who has not signed to speak and does wish to speak,	
9	would you at this time go to the back of the room and sign one	
10	of the registration slips?	
11	REGISTRAR: I was just asking if you have a list	
12	of speakers?	
13	MR. HANWETT: Ma'am, we don't have a list of	
14	speakers, I find, but I don't think we need one at this time.	
15	We seem to appear to have just one speaker.	
16	At this time I call Mr. Robert King of Meeker, Colorado,	
17	representing the Meeker school district.	
18	ROBERT KING: Mr. Chairman and members of the	
19	panel: I am kind of sorry that you didn't have more speakers.	
20	I intended to get my speech ready while others were speaking	
21	today, but I wish to submit a written statement later, but I	
22	just received a copy of the draft statement today and haven't	
23	had time to analyze that. I had certain pages that the county	
24	planner had given me earlier to look over, so I have, basically,	
25	my oral statement, but I want to examine the basis of the whole	

1	report before making the written statement later.	6
2	Certainly, nothing I say should be taken as a criticism	
3	basically of Superior Oil Company in relationship to the	
4	community because I have served as the chairman of the Eastern	
5	Advisory Committee of the Impact mitigation task group for over	
6	a year and Superior was always one of our participants and	
7	participated well in the meetings.	
8	We recognize the importance of Superior Oil development,	
9	the oil shale development for our community, and we recognize	
10	that they have an available plan to go forward and supply some	
11	oil for our country.	
12	But, basically, my statement from what I have learned	
13	of the report is an objection to, I think, not a realistic	
14	statement of the impact upon the community and the school	
15	system, in particular, and I want to get to the basis of that.	
16	On page 36 of the report, it mentions that based on	
17	trended population, no increase in the number of classrooms or	
18	schools would be required in Meeker or Rangely. I am the	
19	superintendent of the Meeker district. I think that the impact	A
20	of Superior Oil Company definitely will make for an increase in	
21	classrooms.	
22	On page 57 of the report, the -- 56 and 57 -- the	
23	capacities of the buildings, and the -- yes, page 57 -- the	
24	capacity of the Meeker building was listed as approximately	
25	1,210 students. I don't know at what time the information was	

	7	
1	developed for this report, but there have been various reports	
2	and things on the capacity. Without counting our Rock school	
3	land, it would be more realistic to say that the capacity is	
4	1,060 rather than 1,210. There are some differences of opinion.	
5	Our high school has a capacity for more students for classrooms	
6	but not enough accordant facilities, so there is a possible	
7	difference of 250 students there, which made this a little bit	
8	inaccurate.	
9	But taking this original capacities and then using the	
10	population figures -- student population on page 57, table 3-15 --	
11	it shows the number of students in the Meeker district in 1980	
12	as 658 students, and at this time, in the fall of 1978, we	
13	already had 847 students, so it would appear to me that the	
14	report is off by about three years of student populations	
15	already, and this has occurred because of some other impacts	
16	that, perhaps, have occurred at the same time or after the	
17	Superior development is talking about.	
18	But using the projections that the population we now have	
19	and the Colorado West Area Council of Governments scenario,	
20	too, which assumes some development in the region without	
21	Superior's development, the population figures that they give,	
22	we find that will be considerably different than is projected	
23	by the environmental impact statement of Superior Oil. For	
24	instance, the 658 projected in 1980, using the COG's projections,	
25	and using 26 percent of population as being in the school,	

	8	
1	which we find more accurate than the 23 percent in the report --	
2	our special census showed 25.4 percent of the population was in	
3	our district in March 17, 1977 -- but using these percentages	
4	and their population projections, we find that in 1980 we will	
5	have 1,480 students in the school district and all down the line.	
6	I have the figure that I will submit for the year 2000.	
7	Superior's statement shows 1,304 students and the COG	
8	projection shows 2,795 using these.	
9	So I think that, perhaps, the environmental impact	
10	statement did not take into account other factors occurring in	
11	the community: oil development, coal development and ehale	
12	developments of other natures that are occurring that will make	
13	these population figures larger than thie.	
14	Taking these capacity differencee, then, the enrollment	
15	differences in the report together, I think that the report	
16	probably, then, is somewhat inaccurate on the capital needs,	
17	showing no need for school rooms in the Meeker school district	
18	clear through 1984 -- table 3-16 -- and there will be a need	
19	for school rooms and, therefore, I think that the figuree that	
20	are developed, I think, that in later pages on revenue and	
21	income, cost and revenue analysis -- which will be on page 60 --	
22	will be inaccurate by the same token. Fewer students that they	
23	projected actually probably will be here means fewer classrooms	
24	and fewer capital needs.	
25	So I think throughout the year, this, in fact, has been	

RESPONSE TO ORAL TESTIMONY

Robert King, Meeker School Superintendent

- A. The trended population does not include the influence of Superior's proposed project nor that of interrelated projects (Reference: page 31, left column, first paragraph, first sentence). Impacts associated with Superior only, are discussed in Chapter 3, Environmental Impacts (Reference: page 54, right column, third full paragraph).
- B. Using the new capacity of 1,060 rather than 1,210 students, the number of new classrooms needed in 1985 would be 12 instead of 6 (Table 3-16, page 57). One school building would be needed by about 2000, assuming that temporary facilities or other means would be used to accommodate the peak number of students in 1985. There are "... differences of opinion ..." regarding the actual number of classrooms. And, according to the cost-revenue analysis (Reference: page 62, left column, fourth full paragraph), even if a new school was required, the proposed Superior project would generate sufficient revenues to cover costs in the Meeker School District.
- C. The 658 students (Table 3-15, page 57) are those associated only with trended population plus those associated with the proposed Superior project (see response to comment A above). Projected numbers of students used in analyzing cumulative impacts, which account for trended population plus the new population associated with interrelated projects and the Superior project, was 1,419 students in 1980, compared to 1,480 as suggested in the comment; the difference is about 6.4 percent. This number was derived using the methods explained in the Environmental Statement (Table 2-9, page 37, and Table 3-15, page 57).
- D. "Other factors" were taken into account during analysis of cumulative impacts in Chapter 6 (page 77).
- E. The "enrollment differences" are discussed in response to comment C above. The cost and revenue analysis on page 60 (Table 3-24) are inaccurate in terms of cumulative impacts but not in terms of trended population and the Superior proposal only, which Chapter 3 portrays. Again, as stated in response C above, the cost and revenue analysis for cumulative impacts used essentially the same enrollment figures as are suggested in the testimony (i.e., 1,419 versus 1,480 in 1980).
- F. Assigning a capital cost to all new students, regardless of existing capacities, would unreasonably overstate potential impacts. During the impact analysis, it was considered prudent to fill excess capacity in the school systems first. The approach used in the analysis was to first project new population that would occur based on the proposed employment by Superior only (Chapter 3) plus other interrelated projects (Chapter 6). Current excess capacities in the schools were filled with new students. Additional facilities that would be needed for the remaining number of students were then calculated. The cost of these facilities was then carried into and evaluated in the cost and revenue analysis.

minimized rather than being realistically presented, and I would like to say that I think we should tell it like it is. We will have the impact.

And I think that if we took the impact from the number of workers and families that Superior is projecting that would be in the Meeker area or Rangely or Rifle or wherever and developed it from the number of students, that we should go from that basis on the capital needs cost -- you have twenty-five students, you have a classroom and you have a classroom cost associated therewith -- rather than trying to utilize current capacities that, when the environmental impact was started, may have been close to accurate, but at this time are not accurate.

MR. HAMMETT: Thank you, Mr. King.

Does any member of the panel have any question of Mr. King?

King?

Mr. King, you said you would submit a written statement later, then?

MR. KING: Right.

MR. HAMMETT: Thank you.

MR. KING: I do have a copy of the Meeker school building capacities and the projected enrollments through '84 and I will leave with you a copy.

MR. HAMMETT: Thank you.

Is there anyone else in the hearing room who would like to make a statement at this time?

ERRATA

A. Page 3:

Left column, fourth full paragraph, first sentence: “. . . in accordance with Section 10 of the River and Harbor Act of 1899, Section 404 of Public Law 92-500 (P. L. 92-4500 and Section 103 of P. L. 92-535.”

The sentence should read: “. . . in accordance with Section 404 of Public Law 92-500.”

B. Page 8:

Right column, first partial paragraph, second full sentence: “A 200- by 200-foot catch basin . . .”

The sentence should read: “A 200- by 200-foot, approximately 10 feet in depth, catch basin . . .”

C. Page 23:

Right column, third full paragraph, third sentence: “. . . it would take about 4-½ days to load a train of 75 cars.”

The sentence should read: “. . . it would take about 4-½ days of production to provide the quantity of product to load a train of 75 cars.”

D. Page 37:

Table 2-10: For the year 2000, the Number of Students Over Capacity is 734, Classrooms Required are 29, and Schools Required are 5.

The table should read: “For the year 2000, the Number of Students Over Capacity is 1,034, Classrooms Required are 41, and Schools Required are 3.

E. Page 38:

Left column, fourth full paragraph, add to the end of the paragraph: “While not shown on Map 1-2, another natural gas pipeline is adjacent and parallels Piceance Creek Road.”

F. Page 41:

Table 2-1:

1. Pollutant column - Oxidant (Ozone), Standards-Federal (Primary-Secondary) and State - 235.

The table should read: “Pollutant column - Oxident (Ozone), Standards-Federal (Primary-Secondary) and State - 240.”

2. Pollutant column - Carbon Monoxide (1-Hour), Standards row-State - 10,000

The table should read: “Pollutant column - Carbon Monoxide (1-Hour), Standards row - State 40,000”

3. Pollutant column - Total Suspended Particulates, Standards row-State - 75

The table should read: "Pollutant column - Total Suspended Particulates Standards row - State (same as Federal)"

G. Page 42:

1. Right column, second paragraph, first sentence: "... Parachute Creek member is deepest ..."

The sentence should read: "... Parachute Creek member is thickest ..."

2. Right column, second paragraph, third sentence: "The richest oil shale ... is more than 600 feet thick ..."

The sentence should read: "The largest quantity of oil shale ... is about 60 feet thick ..."

3. Right column, third paragraph, fourth sentence: "The zone does not outcrop ..."

The sentence should read: "The zone does outcrop ..."

H. Page 46, left column, sixth paragraph
Page 71, left column, fourth full paragraph
Page 73, right column, third paragraph

1. The above paragraphs should be deleted entirely because BLM botanists have inventoried areas that would be disturbed by the proposed Superior project. No plants proposed as threatened and endangered were found.

I. Page 46:

Right column, first full paragraph, second sentence: "Another approximately 3,000 are harvested each year by hunters."

The sentence should read: "Another approximately 4,000 are harvested each year by hunters."

J. Page 52:

Left column, third paragraph, third sentence: "Those on fixed incomes, ..."

The sentence should read: "Those on fixed incomes and with low incomes ..."

K. Page 54:

Right column, first full paragraph, fourth sentence: "... Rangely would require about 7 people ... Meeker would require about 8 people ..."

The sentence should read: "... Rangely would require about 6 people ... Meeker would require about 9 people ..."

L. Page 60:

Table 3-24: Title - "... WITH THE PROPOSED SUPER OIL PROJECT"

The title should read: "... WITH THE PROPOSED SUPERIOR OIL PROJECT"

M. Page 62:

Right column, after the fourth paragraph, add: Until population growth stabilizes, the rapid growth would introduce adverse social effects. Crime would increase as would property losses. Crowded living conditions would contribute to increased incidences of alcoholism, chronic and episodic depression, child abuse, child behavioral problems, suicide, family quarrels, and divorce. Patient-hours at mental health facilities would also increase. Generally, the relatively rapid population growth would bring big-city problems to the rural communities.

N. Page 66:

Table 3-27:

1. New Ambient Concentration heading for Sulfur Oxides - 24-Hour: 90

The number should be 143.

2. Clarifying note - The first column entries, Total Suspended Particulates, are the emissions during (construction). The remaining entries are those projected during operation of the proposed project.

3. Class II PSD Incremental Standards-State: Sulfur Oxides row: Annual = 10, 24-Hour = 50, 3-Hour = 300.

The numbers in the State Sulfur Oxides row should be the same as the Federal row.

4. Ambient Air Quality Standards column - Federal (Primary and Secondary) and State Oxidant (Ozone) 1-Hour row - 235, 235, and 235.

The row should read: 240, 240, and 240.

5. Ambient Air Quality Standards State column: Total Suspended Particulate-Annual = 75, 24-Hour = 260.

The numbers should be the same as in the Federal column.

6. New Ambient Concentration column: Sulfur Oxides 24-Hour row = 90.

The number should be 143.

7. Title: "... PROPOSED SUPER OIL PROJECT"

The title should read: "... PROPOSED SUPERIOR OIL PROJECT"

O. Page 67:

1. Left column, sixth full paragraph, first sentence: "During project operation, excess nitrogen dioxide (NO₂) would be present after complete chemical reduction on non-methane . . ."

The sentence should read: "During project operation, nitrogen oxides (NO_x) would be present even after chemical reaction with non-methane . . ."

2. Right column, first partial paragraph, first partial sentence: ". . . less than 10 percent of existing 180 . . ."

The sentence should read: ". . . less than 10 percent of the maximum 1-Hour level of 180 . . ."

3. Right column, second full paragraph, first sentence: "There are two areas designated as Class I within the region."

The sentence should read: "There is one area designated as Category I by the state of Colorado, and one area federally designated as Class I."

4. Right column, third paragraph, third sentence: ". . . which is shown as 96 micrograms . . . would exceed the allowable Class II increment of 37 . . ."

The sentence should read: ". . . which is shown as 28 micrograms . . . exceed the allowable Class II increment of 19 . . ."

5. Right column, fourth full paragraph, first sentence: "Approximately 237 million tons of coal with a 3 percent sulfur content would be used as fuel in electrical generating plants with the total project production of over 40 million tons of nahcolite (Table 1-1)."

The sentence should read: "The production and use of over 40 million tons of nahcolite would allow approximately 237 million tons of coal to be used as fuel in electrical generating plants (Table 1-1)." (Ref: USGS, Reston VA.)

P. Page 68:

Right column, first partial paragraph: Add: While unquantifiable, increased fracturing permeability related to mine voids and subsidence would increase the rate of ground water inflow into Piceance Creek.

Q. Page 69:

Table 3-28:

Clarifying note: The second through the fifth columns are the estimated changes in the flow of Piceance Creek. The fifth through the ninth columns represent the estimated change in the flow of the White River.

R. Page 70:

Right column: FLOODPLAIN MANAGEMENT

It should read: FLOODPLAIN MANAGEMENT AND PROTECTION OF WETLANDS

S. Page 71:

1. Left column, first partial paragraph, first full sentence: "In compliance with EO 11988, the patent . . . would contain land-use restrictions as would pertain . . . (to) floodplain regulations."

The sentence should read: "In compliance with EO 11988 and EO 11990, the patent . . . would contain land-use restrictions as would pertain . . . (to) floodplain regulations and wetland regulations." (Ref: CO DOW No. B.)

2. Right column, fifth full paragraph, first sentence: ". . . deer mortality would increase from about 3,600 to about 4,480, or by about 24 percent."

The sentence should read: ". . . deer mortality would increase from about 4,600 to about 5,480, or by about 20 percent."

T. Page 76:

Fifth full paragraph, second sentence: ". . . 19 million tons of nahcolite, 59 million barrels of shale oil, 0.5 million tons of alumina, and 3 million tons of soda ash."

The sentence should read: ". . . 39 million tons of nahcolite, 69 million barrels of shale oil, 3 million tons of alumina, and 6 million tons of soda ash."

U. Page 77:

Left column, third paragraph, second sentence: Clarifying note: The three oil shale projects are meant to be prototypes defined as models on which later stages are based and not to be confused with the Department of the Interior's prototype oil shale leasing program, of which Ca and Cb are a part.

V. Page 91:

1. Left column, third paragraph, first sentence: "Approximately 435 acres . . ."

The sentence should read: "Approximately 445 acres . . ."

2. Right column, second paragraph, first sentence: ". . . about 19 million tons of nahcolite . . . 59 billion barrels of oil . . ."

W. Page 96:

Left column, second paragraph, fifth sentence: "This 5,000 acres makes the alternative a logical mining unit."

The sentence should read: "This 5,000 acres makes the alternative a logical mining unit to support the described expanded project facilities."

Form 1279-3
(June 1984)

BORROWER

TD 195 - 04
Proposed Sup
Company 1an

DATE LOANED	BORROWER

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